ALBERTA NATURAL HERITAGE INFORMATION CENTRE
PRELIMINARY PLANT COMMUNITY TRACKING LIST

Compiled by Lorna Allen
April, 2003

Alberta
COMMUNITY DEVELOPMENT

NATURAL HERITAGE INFORMATION CENTRE
ALBERTA

Front page: balsam poplar - aspen / alpine foxtail – bluejoint forest (Populus balsamifera - P. tremuloides / Alopecurus alpinus - Calamagrostis canadensis). Photo by D. Bush.

A Montane forest typically found on mid-slope benches in moist areas with seepage. Mature aspen of large diameter dominant the tree layer, with some large balsam poplar usually present. Red osier dogwood (Cornus stolonifera) is the main species in a sparse shrub layer and alpine foxtail is the dominant grass (up to 80% cover). Bluejoint is consistently present at about 5% cover. The large trees, sparse shrub layer and heavy grass cover make this community quite distinctive.

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The Alberta Natural Heritage Information Centre (ANHIC) was initiated as a joint project of The Nature Conservancy, Canadian Heritage, Alberta Region and Alberta Environmental Protection. The Devonian Botanic Garden of the University of Alberta is an affiliate. The Centre is housed within the Parks and Protected Areas Division of Alberta Community Development.

The purpose of the Centre is to collect, evaluate and make available information on the elements of natural biodiversity of Alberta – plants, animals, natural plant communities and landscapes. ANHIC develops tracking lists of elements that are considered of high priority because they are rare or special in some way. Tracking lists serve as a focus for data gathering to increase our knowledge and understanding of the elements of Alberta's biodiversity. The lists are under constant review and are updated periodically. Elements may be added, deleted, or their status may be revised, as data become available.

Developing A Plant Community Tracking and Watch List

Natural plant communities are defined as recurring assemblages of plant species; the species occurring together because they respond similarly to a variety of site attributes.* To develop an initial tracking list of natural plant community elements, publications describing vegetation types in Alberta were reviewed and discussions were held with knowledgeable individuals. Vegetation types that have been described as 'unusual', 'uncommon', 'of limited extent' or 'encountered infrequently' by vegetation experts were considered for inclusion on the Preliminary Plant Community Tracking List. Vegetation types that have been described as 'in decline' or 'threatened' by vegetation experts were also considered for inclusion. Only natural communities were considered.

Appended to the Preliminary Tracking List is a "watch list". This is an initial list of communities that appear to have a restricted distribution in Alberta and for which information will be collected to ascertain trends.

* Grossman, D.H., K.L. Goodin and C.L. Reuss, eds. 1994. Rare Plant Communities of the Conterminous United States, an Initial Survey. The Nature Conservancy, Arlington VA.

The assistance of the following individuals in developing this tracking and watch list is

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The development of a tracking list for Alberta's special plant communities is at a preliminary stage, with many more references to review and many more knowledgeable individuals to contact. More studies are required, as some aspects of Alberta's vegetation are poorly known. It is hoped that this list will stimulate dialog on the plant community aspect of biodiversity, help us to move toward some understanding of those types that are unusual and help to identify areas and types for which information is lacking.

Rank

Communities are ranked on a global, national and sub-national scale of 1 to 5 in a manner similar to the system developed by The Nature Conservancy for ranking species. A rank of G1 (Global 1) indicates that a community is of high conservation concern at the global scale due to rarity, endemism and / or threats, and a rank of G5 (Global 5) indicates a community that is demonstrably widespread and abundant. Similarly, a rank of N1 (National 1) or S1 (Sub-National 1) indicates that the community is of high conservation concern at the national or state / provincial level, respectively.

The two major criteria in determining a community's rank are the total number of occurrences and the total area (hectares) of the community, range-wide. Measures of geographic range, trends in status (expanding or shrinking range), trends in condition (declining condition of remaining hectares), threats and fragility are secondary ranking factors that may be considered when assigning a rank. The criteria used to assign a rank to a particular community are documented using a standardised format. The guidelines used to rank communities are as given in Table 1.

Estimating Ranks

While community ranking intends to integrate all available information, it is usually necessary to do a preliminary ranking when the information is incomplete. Although these methods are standardised, applying conservation ranks to communities is nonetheless a subjective process. The amount of information available for each of the ranking factors vary for each community. Ranks are assigned based on the best available information and are refined over time. This ranking procedure provides a reasonable estimate of the community rarity, although some degree of error is inherent.

Table 1. Community Ranking Guidelines	
RANKS*	GENERAL CRITERIA
G1(S1)	Five or fewer occurrences or very few remaining hectares
G2(S2)	Six to 20 occurrences or few remaining hectares
G3(S3)	21 to 100 occurrences. May be rare and local throughout its range or found locally, even abundantly, in a restricted range (e.g. a single western province or a physiographic region in the East).
G4(S4)	Apparently secure globally (State / Province wide), though it may be quite rare in parts of its range, especially at the periphery.
G5(S5)	Demonstrably secure globally (State / Province wide), though it may be quite rare in parts of its range, especially at the periphery.
GU(SU)	Status is uncertain
GH(SH)	Historic. Presumed eliminated in the province, with little or no likelihood it will be rediscovered. There may be the potential for restoration.
GX(SX)	Believed to be eliminated throughout range with virtually no likelihood that it will be rediscovered (e.g. American Chestnut Forest)
GP(SP)	Potentially exists. Further documentation needed.
G? (S?)	Element is not yet ranked.
MODIFIERS	
Q	Can be added to any global rank to denote questionable taxonomy (e.g. G2Q = 6 to 20 known occurrences, but questions exist concerning the classification of this type).
?	Can be added to any rank to denote an inexact numeric rank (e.g. G1? = Believed to be 5 or less occurrences, but some doubt exists concerning status).
* ranks can be combined to indicate a range (e.g. G2G3 = May be between 6 to 100 occurrences throughout range, but the exact status is uncertain). Combined ranks indicate a larger margin of error than ranks assigned a "?" qualifier	

Organization of the Lists

Plant communities on the Preliminary Tracking List are organized first by the following physiognomic classes:

Forest / Woodland	Shrub Herbaceous
Shrubland	Herbaceous
Dwarf Shrubland	Sparsely Vegetated
	Aquatic

Within these classes, the types are grouped by dominant species, then listed by plant community, when that information is available.

Communities are named according to the dominant species found in each vegetation layer. Species within the same vegetation layer are separated by an "-", layers are separated by an " / ". A forest community, for example, may have several layers, with the community name put together as follows:

tree layer 1 / tree layer 2 / tall shrub / medium shrub / low shrub-grass-herb-moss-lichen.

A short description of each type is included, and when available, references are supplied that give more detail on the type. The preliminary provincial rank is given directly opposite the community name. Tables listing the plant communities on the preliminary tracking list, by natural region, in alphabetical order of scientific name are provided in Appendix 1. Common names for the community types are also included in those tables.

Updates and Additional Information

We are asking for your help in the development of the plant community tracking list and in the documentation of community locations.

Information on the ANHIC is available through the Internet at http://www.cd.gov.ab.ca/preserving/parks/anhic/flashindex.asp or by contacting:

Alberta Natural Heritage Information Centre
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2nd Floor, 9820 – 106 St., Edmonton AB T5K 2J6

Comments on this list or requests to be put on the mailing list for updates, should be directed to:

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Preliminary Tracking List - Plant Communities

May 28, 2003
Alberta Natural Heritage Information Centre

Forest/Woodland

Acer negundo Group

Acer negundo / Prunus virginiana
Manitoba maple / choke cherry
CEAB000095

Rank: **S1S2**

- only natural communities to be tracked
- occurs primarily in the Dry Mixedgrass Natural Region, and extending into the Central Parkland Subregion.
- found on landscapes with moisture levels higher than local precipitation
- these include terraces fans or floodplains along streams, rivers, lakes, springs or ponds (Thompson and Hansen 2002)
- also v-shaped ravines and on protected slopes that may collect snow or be flooded by occasional overland flows
- the water table is generally near the surface in spring and after rains, but drops in dry periods
- Manitoba maple dominates the tree layer
- the tall shrub layer of Prunus virginiana of undisturbed stands may be replaced by a low shrub layer of Symphoricarpos occidentalis and Rosa with disturbance such as cattle grazing
- Carex sprengelii is often a prominent understory species, replaced by weeds in disturbed stands.
- Often bisected by small drainages edged by species such as Glyceria striata

Betula papyrifera Group

Betula papyrifera - Betula occidentalis / Arctostaphylos uva-ursi
white birch - water birch / common bearberry
CEAB000016

Rank: **S1**

- open Betula on subxeric, moderately steep Montane slopes of south aspect
- tree cover is sparse, but individual trees may attain heights of 17 m
- ground cover is dominated by clumps of Juniperus communis, Arctostaphylos uva-ursi and Carex scirpoidea within patches of unvegetated scree
- type O16 (Corns and Achuff 1982)

Larix laricina Group

Larix laricina / Carex prairea
tamarack / prairie sedge
CEAB000038

Rank: **S1**

- a Dry Mixedwood wetland community of constant discharge areas (likely calcareous)
- Salix candida forms a scattered, discontinuous shrub layer
- Carex prairea is the dominant species in the herb layer, but C. capillaris, C. leptalea and C. gynocrates are locally abundant

Forest/Woodland

Larix lyallii Group

Larix lyallii / Luzula hitchcockii
subalpine larch / smooth wood rush
CEAB000063

Rank: **S2?**

- found on mesic Upper Subalpine sites with moderate to steep slopes and north to easterly aspects
- tree layer may include some Abies lasiocarpa and Picea engelmannii
- the herb-dwarf shrub layer is well developed
- type C75 (Achuff et al. 1997)

Larix occidentalis Group

Larix occidentalis / Calamagrostis rubescens
western larch / pine reed grass
CEAB000003

Rank: **S1**

- in Alberta, Larix occidentalis is usually found only as scattered trees
- stands have been described in the Subalpine Natural Subregion in the Crowsnest area (Wallis 1980)
- typically occur on north facing slopes with a dense canopy of Larix
- there is often a second tree layer of mixed species including Abies lasiocarpa and Pinus contorta
- the understory is sparse, with the ground heavily littered with needles
- patches of Rubus parviflorus form where more light reaches the understory as a result of small canopy gaps

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Picea engelmannii Group

Picea engelmannii - Abies lasiocarpa / Dryas octopetala
Engelmann spruce - subalpine fir / white mountain avens
CEAB000017

Rank: **S2S3**

- an Upper Subalpine community of steep slopes on colluvial and morainal landforms
- restricted to mesic sites at tree-line in the Front Ranges
- solifluction is common
- the tree layer is open and often stunted with a sparse to absent shrub layer
- Dryas octopetala dominates a well-developed herb/dwarf shrub layer
- type O19 (Corns and Achuff 1982, Achuff et al. 1986)

Picea engelmannii - Abies lasiocarpa / Salix planifolia / Hylocomium splendens
Engelmann spruce - subalpine fir / flat-leaved willow / stair-step moss
CEAB000066

Rank: **S1?**

- a mature, open-canopied Front Range Subalpine forest with patchy willow and a relatively continuous feathermoss carpet (Strong 1996)
- Picea engelmannii is the dominant tree species with Abies lasiocarpa secondary but individuals of Pinus contorta are present
- there is a patchy shrub layer of willow, primarily Salix planifolia
- Elymus innovatus is the most common forb, but with low cover (<2%)
- there is a well developed moss layer, dominated by Hylocomium splendens
- this community has a multilayered stand structure and multi-aged population structure
- deadfall and standing snags abundant

Forest/Woodland

Picea engelmannii Group

Picea engelmannii - Abies lasiocarpa / Salix vestita / Cassiope tetragona
Engelmann spruce - subalpine fir / rock willow / white mountain-heather
CEAB000018

Rank: **S2**

- a Front Range permafrost community of the Subalpine
- found on moderate to steep, north-facing slopes, usually on moraine or colluvium
- the tree layer is often sparse and the surface often soliflucted
- type C24 (Corns and Achuff 1982)

Picea engelmannii / Leymus innovatus
Engelmann spruce / hairy wild rye
CEAB000019

Rank: **S2**

- Front Range community of mesic to subxeric sites on steep, south facing slopes in the Upper Subalpine
- distinguished from similar types by low (<25%) feathermoss cover
- type C33 (Corns and Achuff 1982, Achuff et al. 1986)

Picea engelmannii / Salix drummondiana
Engelmann spruce / Drummond's willow
CEAB000067

Rank: **S1?**

- open forest on Subalpine alluvial flats, adjacent to streams (Lee et al. 1982)
- Picea engelmannii is the dominant tree
- the shrub layer is diverse, but Salix drummondiana is clearly dominant (about 30% c0ver)
- Salix vestita, Shepherdia canadensis and Salix farriae may also be abundant
- Arctostaphylos rubra, Equisetum scirpoides, Gentianella propinqua, Hedysarum alpinum , Poa alpina and Zigadenus elegans are common

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Picea engelmannii / Salix vestita
Engelmann spruce / rock willow
CEAB000068

Rank: **S2?**

- open spruce on glacial valley train deposits in the Lower Subalpine (Kondla 1978)
- Engelmann spruce is the dominant tree species, forming both a tree and tall shrub layer
- there is a moderately well developed shrub layer of Salix vestita but only scattered herbs
- the ground surface is up to 40% bare, primarily of cobbles with some leaf litter and downed trees

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Picea glauca Group

Picea glauca / Alnus tenuifolia - Betula neoalaskana / Equisetum pratense / Hylocomium splendens
white spruce / river alder - Alaska birch / meadow horsetail / stair-step moss
CEAB000040

Rank: **S3**

- a Boreal Forest silt terrace community of major river valleys of NW Canada (Timoney 1996)
- old-growth forest with tall trees (40-46 m) and high structural, functional and biological diversity
- characterised by a deep accumulation of living mosses and a high cover of epiphytes

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Forest/Woodland

Picea glauca Group

Picea glauca / Betula pumila - Salix bebbiana / Carex eburnea
white spruce / dwarf birch - Bebb's willow / bristle-leaved sedge
CEAB000069

Rank: **S1?**

- poorly-drained Montane wetland complex of peaty gleysols, interspersed with calcium-rich pools with a diverse flora
- micro-hummocky
- probably subject to seasonal flooding
- open white spruce canopy with a well-developed tall shrub layer of dwarf birch, Bebb's willow (Salix bebbiana), young white spruce regeneration
- shrubby cinquefoil (Potentilla fruticosa) is the main species in an open low shrub layer
- bristle-leaved sedge dominants the herb/dwarf shrub layer, with patches of common bearberry (Arctostaphylos uva-ursi) and creeping juniper (Juniperus horizontalis) on dryer microsites

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Picea glauca / Cetraria islandica
white spruce / lichen
CEAB000041

Rank: **S1?**

- open park-like white spruce on sand hills with a lichen mat dominated by Cetraria islandica
- a Central Mixedwood or Athabasca South community considered similar to timberline types more typically found far to the north east (Raup 1935)
- occurs on upper hill slopes with Pinus banksiana communities comming in on lower slopes

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Picea glauca / Rosa acicularis / Thuidium abietinum
white spruce / prickly rose / fern moss
CEAB000020

Rank: **S1**

- Montane loess deposition forests on level to moderately sloping, north-facing sites
- Picea glauca is the dominant tree, with 25-35% cover
- the shrub layer is well developed (20-40% cover) and dominated by Rosa at 10-20%
- Shepherdia canadensis may be present, but at less than 5% cover
- the herb/dwarf shrub layer is well developed (30-40% cover) and dominated by Leymus innovatus (10-20%) and Linnaea borealis (2-12%)
- Thuidium abietinum dominates a sparse moss layer
- type C27 (Corns and Achuff 1982)

Picea glauca / Shepherdia canadensis / Thuidium abietinum
white spruce / Canada buffaloberry / fern moss
CEAB000021

Rank: **S2**

- Montane to Subalpine closed forests, generally on north-facing slopes of eolian and fluvial landforms
- restricted to areas of active calcareous loess deposition
- Picea glauca is the dominant tree, with 25-30% cover
- the shrub layer is well developed (10-30% cover) and dominated by Shepherdia canadensis with cover greater than 10%
- Rosa may be present, but at less than 5% cover and Juniperus communis is frequent
- the herb/dwarf shrub layer is dominated by Leymus innovatus (5-20%) and Linnaea borealis (5-20%)
- Thuidium abietinum dominates the moss layer with greater than 50% cover
- type C26 (Corns and Achuff 1982, Achuff et al. 1986)

Forest/Woodland

Picea glauca Group

Picea glauca / Thuidium abietinum
white spruce / fern moss
CEAB000070

Rank: **S2S3**

- mesic Montane forests on well to rapidly drained north-facing slopes
- found on highly calcareous eolian and fluvial landforms
- dominance of Thuidium abietinum in the moss layer characteristic
- separated from other Picea / Thuidium types by having low shrub cover (usually less than 5%) and a sparse herb - dwarf shrub layer
- known from Jasper National Park in the area of the east gate but may also occur in the Brule Lake area (Dowding 1929)
- type C2 (Corns and Achuff 1982)

Pinus albicaulis Group

Abies lasiocarpa - Pinus albicaulis - Picea engelmannii / Empetrum nigrum
subalpine fir - whitebark pine - Engelmann spruce / crowberry
CEAB000050

Rank: **S2**

- a high Subalpine community found at 1800 to 2200m
- usually upper to mid slope on stony, mesic sites of variable aspect
- may be restricted to acidic parent materials, north of the Bow River (Timoney 1999)
- the site may be over 40% unvegetated

Abies lasiocarpa - Pinus albicaulis / Xerophyllum tenax
subalpine fir - whitebark pine / beargrass
CEAB000051

Rank: **S1S2**

- a community of lower Subalpine sites (Timoney 1999)
- found on moderate to steep slopes with southerly and westerly aspects
- soils are mesic to subxeric, rapidly- to well-drained

Pinus albicaulis - Abies lasiocarpa / Luzula hitchcockii - Vaccinium myrtillus
whitebark pine - subalpine fir / smooth wood rush - low bilberry
CEAB000071

Rank: **S1S2**

- found on moderate to steep, south to west-facing subxeric to mesic Upper Subalpine sites
- commonly with an open canopy
- a well developed herb-dwarf shrub layer that often includes Xerophyllum tenax
- type O30 (Achuff et al. 1997)

Pinus albicaulis - Picea engelmannii / Dryas octopetala
whitebark pine - Engelmann spruce / white mountain avens
CEAB000072

Rank: **S1**

- a Waterton type of exposed, subxeric Upper Subalpine sites
- found on moderate to steep slopes from 2050 to 2300 m
- type O31 (Achuff et al. 1997)

Forest/Woodland

Pinus albicaulis Group

Pinus albicaulis - Pinus contorta / Juniperus communis - Leymus innovatus - Linnaea borealis
whitebark pine - lodgepole pine / ground juniper - hairy wild rye - twinflower
CEAB000073

Rank: **S2S3**

- characteristic Subalpine type, transitional to Pinus contorta (Timoney 1999)
- found on subxeric, well-drained sites of south-west aspect with significant bedrock exposure and bare mineral soil

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Pinus albicaulis / Juniperus communis - Arctostaphylos uva ursi
whitebark pine / ground juniper - common bearberry
CEAB000074

Rank: **S2S3**

- widespread Upper Subalpine type (Timoney 1999)
- found on subxeric sites of south or south-west aspect
- typically on steep slopes with significant bedrock exposure and bare mineral soil

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Pinus contorta Group

Pinus contorta / Ledum groenlandicum / Vaccinium scoparium / Pleurozium schreberi
lodgepole pine / common Labrador tea / grouseberry / Schreber's moss
CEAB000130

Rank: **S1?**

- a subapline closed forest community
- found at relatively high elevations (up to 1850 m) on subhygric soils
- occurs at the highest elevation of Pinus contorta / Ledum groenlandicum communities (Strong 2002)
- Pinus contorta is the dominant tree, averaging 30%, with Picea engelmannii present, averaging about 8% cover
- Ledum groenlandicum is the dominant shrub, averaging about 10% cover
- Vaccinium scoparium dominates the herb/dwarf shrub layer (>30%)
- the moss layer is well developed, with Pleurozium schreberi dominant at about 30% cover
- this community is separated from other Pinus contorta / Ledum groenlandicum types by the higher cover of Picea engelmannii, the common occurrence (50% constancy) of Phyllodoce spp. and lack of Picea mariana (Strong 2002)

Pinus flexilis Group

Abies lasiocarpa - Pinus flexilis - Populus tremuloides / Thalictrum venulosum
subalpine fir - limber pine - aspen / veiny meadow rue
CEAB000052

Rank: **S2?**

- a south-western Alberta Montane to lower Subalpine community found at 1800 to 1900m
- found on colluvial or morainal, northwest-facing slopes
- restricted in distribution but may be a transitional type (Timoney 1999)

Pinus flexilis - Pseudotsuga menziesii / Juniperus spp. / Arctostaphylos uva-ursi
limber pine - Douglas-fir / juniper species / common bearberry
CEAB000075

Rank: **S2**

- an open forest with an understory dominated by Juniperus communis and J. scopulorum
- occurs in the Montane on steep, south-facing erosional scarps
- this is the community type at the most northerly extent of the range of Pinus flexilis
- type O2 (Corns and Achuff 1982, Achuff et al. 1986)

Forest/Woodland

Pinus flexilis Group

Pinus flexilis / Arctostaphylos uva ursi - Juniperus horizontalis
limber pine / common bearberry - creeping juniper
CEAB000076

Rank: **S2S3**

- characteristic of south-west Montane sites at lower elevations (1405 m to 1450 m) (Timoney 1999)
- found on rapidly to well-drained sites of colluvial or residual parent material
- on lower to mid slope with SW exposure and bedrock close to the surface, often associated with ridges
- soils are Orthic Regosols or rockland
- cover per vegetation layer: tree 12%; shrub >30%; herb >2%; grass ~3%
- significant bare ground of cobbles and stones, mineral soil, bedrock compose (~35% cover)
- most abundant species: Pinus flexilis, Arctostaphylos uva-ursi, Juniperus horizontalis, Potentilla fruticosa, Koeleria macrantha
- Juniperus horizontalis seems to be characteristic
- patch size is probably relatively small due to requirement for shallow bedrock
- high frequency, low intensity fire may be important in maintaining this type and in minimizing the potential for a high intensity burn
- white pine blister rust may be causing a decline of Pinus flexilis

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Pinus flexilis scree
limber pine scree
CEGL000815

Rank: **S1S2**

- located on high elevation Subalpine sites in accumulation areas adjacent to slopes susceptible to bedrock slope movement
- steep south to southwest facing slopes, usually > 30 degrees
- characterized by steep, unstable slopes and lack of soil development
- Pinus flexilis is the main tree species, with 5 to 10% cover
- vegetation is generally sparse (90% unvegetated) with most forb species present in or below areas stabilized by Juniper spp. and Arctostaphylos
- Hedysarum sulphurescens and Anemone multifida are the most common forbs; with a number of other species present in trace amounts
- this community the result of natural disturbance, failure of bedrock slopes
- more stable areas contain more vegetation growth
- this community may occur as islands within a non-forested scree situations (Pfister et al 1977)

Pseudotsuga menziesii - Pinus flexilis / Juniperus communis / Festuca campestris
Douglas-fir - limber pine / ground juniper / mountain rough fescue
CEAB000082

Rank: **S2S3**

- characteristic of south-west Montane sites, may extend into the lower Subalpine (Timoney 1999)
- rapidly to well-drained sites on upper slopes and crests at moderate elevation
- bedrock is not close to the surface
- found on sites with deeper soils and less wind exposure than typical of limber pine associations

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Populus X jackii Group

Populus X jackii - Betula occidentalis / Salix lutea / Stipa comata
cottonwood - water birch / yellow willow / needle-and-thread
CEAB000108

Rank: **S1**

- open cottonwood stands on sand flats
- within sand dune areas of the Dry Mixedgrass Natural Subregion (Adams et al. 1997)
- most sand flats are not treed

Forest/Woodland

Populus angustifolia Group

Populus angustifolia / Cornus stolonifera
narrow-leaf cottonwood / red-osier dogwood
CEGL002664

Rank: **S2S3**

- a riparian forest type found in the Mixedgrass and Foothills Fescue subregions
- occurs on flood plains along major streams and rivers (Thompson and Hansen 2002)
- typically on alluvial deposits with large amounts of cobbles and gravels and soils are usually Regasols
- characterized by a narrow-leaved cottonwood overstory
- shrub layer may be made up of diverse species, but red-osier dogwood is alway present

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Populus angustifolia / recent alluvial
narrow-leaf cottonwood / recent alluvial
CEAB000166

Rank: **S2S3**

- a riparian community found in the Mixedgrass and Foothills Fescue subregions
- occurs on flood plains along major streams and rivers (Thompson and Hansen 2002)
- typically on alluvial deposits with large amounts of cobbles and gravels and soils are usually Regasols
- characterized seedlings or saplings of narrow-leaved cottonwood, sometimes with a significant amount of sandbar willow (Salix exigua)
- graminoids are dominant in the understory, including species such as red top (Agrostis stolonifera) and timothy (Phleum pratense)

Populus balsamifera Group

Populus balsamifera - P. tremuloides / Alopecurus alpinus - Calamagrostis canadensis
balsam poplar - aspen / alpine foxtail - bluejoint
CEAB000077

Rank: **S1S2**

- a Montane community of hygric or subhygric discharge areas, typically on mid-slope benches
- mature aspen of large diameter often dominant the tree layer, some large balsam poplar is usually present
- red osier dogwood (Cornus stolonifera) is the main species in a sparse shrub layer
- alpine foxtail is the dominant grass (up to 80% cover), but bluejoint is consistently present at about 5% cover
- tall white bog orchid (Habenaria dilatata), northern valerian (Valeriana dioica) and marsh butterweed (Senecio foetidus) are usually present, but with low cover
- the large trees, sparse shrub layer and heavy grass cover make this community quite distinctive

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Forest/Woodland

Populus balsamifera Group

Populus balsamifera / Alnus tenuifolia - Cornus stolonifera / Equisetum pratense
balsam poplar / river alder - red-osier dogwood / meadow horsetail
CEAB000042

Rank: **S3**

- a Boreal Forest old growth community of the Peace River Lowlands
- found on silt terraces along major river valleys of NW Canada (Timoney 1996)
- may occur as a canopy gap or as a stand on older alluvial terraces
- occasional seasonal flooding may occur but stands are generally restricted to middle and upper terraces subject to minimal disturbance (flooding or fire)
- mesic sites, soils tend to be Cumulic Regosols
- balsam poplar dominates a closed tree layer
- river alder and red-osier dogwood form a dense tall shrub layer
- prickly rose (Rosa acicularis) and low-bush cranberry (Viburnum edule) are the main species in the low shrub layer
- herb / dwarf shrub layer is patchy, with meadow horsetail dense in some areas, others dominated by dewberry (Rubus pubescens) or common pink wintergreen (Pyrola asarifolia)
- well developed lichen community on bark
- high cover of leaf litter (up to 90%)
- characteristic species include low-bush cranberry and dewberry
- an old growth forest with large trees and large standing snags as well as downed logs

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Populus balsamifera / Rhamnus alnifolia / Equisetum arvense
balsam poplar / alder-leaved buckthorn
CEAB000114

Rank: **S1**

- a mature community found on level, wet, nutrient rich sites in the Central Mixedwood Boreal Forest
- balsam poplar forms a closed canopy with up to 80% cover
- the shrub layer is well developed, with alder-leaved buckthorn at 20% cover
- wild red raspberry (Rubus idaeus) and northern black current (Ribes hudsoniana) each contribute up to 10% of the shrub cover
- common horsetail (Equisetum arvense) is the most prominent herb, with up to 65% cover
- a similar community type occurs in Saskatchwan (type e1.4 in Beckingham et al. 1996)

Populus balsamifera / Viburnum opulus / Matteuccia struthiopteris
balsam poplar / high-bush cranberry / ostrich fern
CEAB000043

Rank: **S1S2**

- a moist, nutrient-rich community that occurs in seepage areas on hillsides and in depressions
- on pitted moraine and glaciofluvial outwash in the Dry and Central Mixedwood Natural Subregions

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Populus deltoides Group

Populus deltoides / Cornus stolonifera
plains cottonwood / red-osier dogwood
CEGL000657

Rank: **S2S3**

- a riparian community found in the Dry Mixedgrass Subregion
- occurs on older alluvial bars of major streams and rivers (Thompson and Hansen 2002)
- extensive stands occur on major floodplain terraces
- soils are usually Regasols with a deep layer of silt loam to silty clay overlying coarse sands or gravels
- characterized by an open to closed canopy of plains cottonwood (up to 90% cover)
- the understory is dense and diverse
- red-osier dogwood is present in all stands, although cover is variable (3-98%)

Forest/Woodland

Populus deltoides Group

Populus deltoides / Glycyrrhiza lepidota - Juncus balticus
plains cottonwood / wild licorice - wire rush
CEAB000163

Rank: **S2S3**

- localized depressions between dunes and in sand plain areas of the Dry Mixedgrass Natural Subregion
- plains cottonwood dominates the tree layer, although aspen (Populus tremuloides) and peach-leaf willow (Salix amygdaloides) are often present
- the shrub layer is sparse to absent (5% cover or less)
- wild licorice and wire rush were present in all stands (n=3)

Populus deltoides / Symphoricarpos occidentalis
plains cottonwood / buckbrush
CEGL000660

Rank: **S2S3**

- a riparian community found in the Dry Mixedgrass Subregion
- occurs on older alluvial bars of major streams and rivers (Thompson and Hansen 2002)
- extensive stands occur on major floodplain terraces
- soils are usually Regasols with a deep layer of silty clay to clay overlying coarse sands or gravels
- characterized by an open to closed canopy of plains cottonwood (20 to 90% cover)
- the understory is dominated by short shrubs such as buckbrush, often with a significant rose component

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Populus deltoides / recent alluvial
plains cottonwood / recent alluvial
CEAB000164

Rank: **S1S3**

- a riparian community found in the Dry Mixedgrass Subregion
- occurs on recent alluvial bars of streams and rivers (Thompson and Hansen 2002)
- soils are usually deep Regasols with a layer of silty clay to clay overlying coarse sands or gravels
- forms extensive stands on major floodplain terraces
- characterized seedlings or saplings of plains cottonwood, sometimes with a significant amount of sandbar willow (Salix exigua)
- other cottonwoods (P. angustifolia or P. balsamifera) may be present, but plains cottonwood is dominant
- the understory is diverse, with species such as western wheat grass (Pascopyrum smithii) and three-square rush (Scirpus pungens) averaging over 50% cover, but absent from some stands

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Populus tremuloides Group

Populus tremuloides / Leymus innovatus - Aster conspicuus avalanche community
aspen / hairy wild rye - showy aster avalanche community
CEAB000023

Rank: **S2**

- Montane to Subalpine avalanche communities on mesic to subxeric, steep, south-facing colluvial slopes
- the trees may be stunted and shrub-like, and the stands are often open
- type C22 (Corns and Achuff 1982)

Populus tremuloides / Menziesia ferruginea
aspen / false azalea
CEAB000022

Rank: **S1**

- found on cool, steep, northeast-facing seepage slopes in the Upper Subalpine

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Forest/Woodland

Populus tremuloides Group

Populus tremuloides / Rosa acicularis / Apocynum androsaemifolium
aspen / prickly rose / spreading dogbane
CEAB000170

Rank: **SU**

- a closed, maturing aspen stand of the Peace River Lowland Natural Subregion, and may be expected in other Boreal Subregions as well
- found on gently sloping fluvial terraces, on moderately to well drained sites on sandy substrate (Allen et al. 2002)
- aspen cover averages 70%
- the shrub layer is well developed and dominated by prickly rose (10 to 15% cover)
- spreading dogbane clearly dominates the forb layer (15 to 20% cover)
- bog cranberry (Vaccinium vitis-idaea) prominent in patches
- hairy wild rye (Leymus innovatus) is the most common graminoid

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Populus tremuloides / Rubus parviflorus
aspen / thimbleberry
CEAB000078

Rank: **S2**

- a Foothills Parkland and Montane community of south west Alberta, type C61 (Achuff et al. 1997)
- found primarily on gentle to steep slopes on various aspects
- likely associated with seepage during some point in the growing season (Willoughby et al. 1998)
- soils are well drained, mesic to subhygric Regosols and Luvisols
- a closed canopy Populus tremuloides forest ((40-65% cover) with a sparse tall shrub layer but a dense dwarf shrub / herb layer
- lichens and bryophytes scarce
- Rubus parviflorus is the dominant dwarf shrub (up to 40% cover)
- A wide range of forbs are present, with Osmorhiza occidentalis, Viola canadensis, Vicia americana and Aster conspicuus being the most prominent
- Heracleum lanatum tends to replace Rubus parviflorus on similar seepage sites north of the Crowsnest Pass (Willoughby et al. 1998)

Populus tremuloides / Rubus parviflorus / Aralia nudicaulis
aspen / thimbleberry / wild sarsaparilla
CEAB000044

Rank: **S2S3**

- this community is often associated with seepage areas related to a layer of reduced permeability in the soil profile that restricts drainage and channels seepage (Alberta Energy and Natural Resources 1984)
- short duration seepage likely occurs during heavy rainfall
- soils are mesic to subhygric moderately well to well drained Brunisolic Gray Luvisols and Eluviated Eutric Brunisols
- Populus tremuloides is dominant, but P. balsamifera is a significant component of some stands
- Rubus parviflorus dominates the well-developed low shrub layer (from 10 to 60% cover)
- Viburnum edule is usually present, often in significant amounts (up to 20% cover)
- Rosa acicularis and Spiraea betulifolia are also usually present
- Alnus crispa forms a significant taller shrub layer in some stands (up to 20% cover)
- there is a high forb cover of species indicating nutrient-rich conditions, but low cover of grass or moss
- Aralia nudicaulis is usually the dominant herb, but Epilobium angustifolium is sometimes co-dominant
- Aster conspicuous and Lathyrus ochroleucus are usually present although with low cover

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Forest/Woodland

Populus tremuloides Group

Populus tremuloides / Salix bebbiana - Corylus cornuta / Calamagrostis canadensis - Matteuccia struthiopteris

aspen / Bebb's willow - beaked hazelnut / bluejoint - ostrich fern

CEAB000045

Rank: **S1**

- imperfectly-drained hygric riparian wet meadow in the Central Mixedwood Natural Subregion (Timoney and Robinson 1998, plot bf76)
- the community composition is influenced by a widely-fluctuating water table due to typical riparian processes and beaver activity
- relatively open tree layer with a tall shrub layer of about 10% and a low shrub layer of about 17% cover
- Calamagrostis canadensis is the dominant understory species (45% cover) with Matteuccia struthiopteris also prominent with 25% cover

Shrubland

Amelanchier alnifolia Group

Amelanchier alnifolia / Arctostaphylos uva-ursi / Oryzopsis pungens

saskatoon / common bearberry / northern rice grass

CEAB000029

Rank: **S2S3**

- found on level, upland pockets in the Dry Mixedwood Natural Subregion
- usually surrounded by Jackpine or Aspen stands
- occurrences usually small
- type DMA7 in Willoughby et al. 1997

Andromeda polifolia Group

Andromeda polifolia / Sarracenia purpurea / Sphagnum angustifolium

bog rosemary / pitcher-plant / peat moss

CEAB000120

Rank: **S1S2**

- this community forms a narrow band around the edges of small lakes in the Athabasca Plains Natural Subregion (Allen and Johnson 2000)
- bog rosemary is always significant, but cover varies from 15% to 50%
- pitcher plant is characteristic, with cover varying from 10% to 24%
- the peat moss species are variable, with Sphagnum angustifolium the dominant moss at 45% to 60% cover in two stands, but absent in a third, where Sphagnum fuscum was dominant at 95% cover

Shrubland

Artemisia cana Group

Artemisia cana / Stipa viridula - Pascopyrum smithii
silver sagebrush / green needle grass - western wheat grass
CEAB000157

Rank: **S2S3**

- found in the Dry Mixedgrass subregion of Alberta and into southern Saskatchewan (Lawrence and Romo 1994)
- occurs on steep (17°) slopes of various aspect
- average cover of Artemisia cana was ranges from 20 to 40%
- Symphoricarpos occidentalis is prominent in some stands, with cover ranging from 1-15%
- Stipa viridula is the dominant grass, with an average cover of 30%
- Pascopyrum smithii is generally co-dominant, averaging 20% cover
- Elymus lanceolatus may take over from Pascopyrum smithii as co-dominant on some sites

Other common species include Bouteloua gracilis, Stipa comata, Calamovilfa longifolia, Artemisia frigida, Achillea millefolium, Antennaria parvifolia, Gutierrezia sarothrae, Opuntia polyacantha, Thermopsis rhombifolia and Aster ericoides

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Artemisia tridentata Group

Artemisia tridentata ssp. vaseyana - Amelanchier alnifolia
big sagebrush - saskatoon
CEAB000008

Rank: **S1**

- a Montane community of steep, stony, south-west facing colluvial slopes with frequent rock outcrops
- Amelanchier alnifolia is often a prominent low shrub, with Arctostaphylos uva-ursi a common dwarf shrub
- prominent graminoids are Festuca idahoensis, Pascopyrum smithii (Agropyron smithii), Elymus lanceolatus (Agropyron dasystachyum) and Koeleria macrantha
- Balsamorhiza sagittata is prominent in spots as is Lupinus sericeus
- previously listed as Artemisia tridentata - Saxifraga bronchialis and Artemisia tridentata - Balsamorhiza sagittata types (Fairbarns 1986)
- lumped here because of similarities in habitat and species

Artemisia tridentata ssp. vaseyana - Rhamnus alnifolia
big sagebrush - alder-leaved buckthorn
CEAB000010

Rank: **S1**

- known only from Montane meadows adjacent to the South Castle River (Fairbarns 1986)
- Artemisia tridentata grows on gravel of old creek beds
- Rhamnus alnifolia grows in moister areas of the meadow with finer-textured soils
- these meadows are heavily disturbed
- also described as B16. Artemisia tridentata - Rhamnus alnifolia / Poa pratensis (Willoughby et al. 1998)

Betula glandulosa Group

Betula glandulosa / Festuca campestris
bog birch / mountain rough fescue
CEAB000115

Rank: **S2S3**

- this is a community type of the Upper Foothills Natural Subregion (Willoughby 2000)
- it occurs on mesic to subhydric, well-drained sites on fluvial and lucustrine parent materials
- occurrences are likely areas of snow accumulation, as bog birch requires the winter insulation and spring moisture
- bog birch has an average of 32% cover, fescue up to 30% cover and bearberry (Arctostaphylos uva-ursi) is also significant at 10% cover
- graceful sedge (Carex praegracilis) and alpine bistort (Polygonum alpinum) are characteristic species

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Shrubland

Betula occidentalis Group

Betula occidentalis

water birch

CEAB000169

Rank: **SU**

- a Foothills Parkland and Grassland community, with some occurrences in the Lower Foothills
- found on alluvial terraces, streambanks, and abandanoned channels along rivers and streams (Thompson and Hansen 2002)
- may also occur in moist areas such as around seeps and springs
- soils are usually thin Regosols overlying coarse textured materials such as colluvium or cobbles
- the water table remains at the surface throughout the growing season
- the tall shrub layer is dominated by yellow willow, with red-osier dogwood the dominant understory shrub
- water birch dominates the tall shrub layer (40 to 70% cover)
- red-osier dogwood (Cornus stolonifera), choke cherry (Prunus virginiana) and Rose are usually present as part of the tall shrub layer
- sensitive to grazing pressure
- further work may show there is more than one type of riparian water birch community type

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Betula occidentalis - Amelanchier alnifolia / Artemisia campestris - Elymus lanceolatus (Agropyron dasystachyum)

water birch - saskatoon / plains wormwood - northern wheat grass

CEAB000056

Rank: **S1**

- a Montane dune / swale community of sandy areas
- Betula occidentalis and Amelanchier alnifolia form dense patches on dunes that are up to 2m high
- scattered Artemisia campestris and Elymus lanceolatus are the main species found between the dunes, but vegetation is sparse, with up to 90% bare sand

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Chamaedaphne calyculata Group

Chamaedaphne calyculata - Kalmia polifolia / Cladina mitis

leatherleaf - northern laurel / green reindeer lichen

CEAB000122

Rank: **S1S2**

- this is a community of the Athabasca Plains Natural Subregion (Allen and Johnson 2000)
- it occurs were the water table is at or near the surface and sites are likely subject to seasonal flooding
- it generally forms a ring at the outer edge of linear seepage channels on sand or in shallow depressions in sand
- there may be an open cover of small jack pine (Pinus banksiana)
- leatherleaf is the dominant shrub, with up to 50% cover, with northern laurel consistently present at about 5% cover
- there is a well developed lichen cover, up to 50%, with green reindeer lichen and Cladonia gracilis being the two most prominent species

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Shrubland

Crataegus rotundifolia Group

Crataegus rotundifolia / Heracleum lanatum - Urtica dioica - Viola canadensis
round-leaved hawthorn / cow parsnip - common nettle - western Canada violet
CEAB000058

Rank: **S1S2**

- a community found primarily in the Mixedgrass Natural Subregion
- Crataegus douglasii may also occur as a community; composition has not been documented
- main known occurrences are along drainages and valley bottoms in and surrounding the Cypress Hills
- found on alluvial terraces along streams and rivers or on slopes immediately below a spring or seep (Thompson and Hansen 2002)
- stands on slopes tend to be in a concave spot, mid slope and have been documented on south-facing slopes, although they may occur on other aspects
- the water table is close to the surface in spring and after rains, but subject to draw down during dry periods
- brief flooding may occur
- round-leaved hawthorn forms dense clumps (to 90+% cover)
- low shrubs are sparse to absent, but may include Prunus virginiana and Symphoricarpos occidentalis
- herb layer is also sparse, with cow parsnip, common nettle and western Canada violet usually being present
- some stands have a high cover of leaf litter
- round-leaved hawthorn is always present and dominant
- herb and low shrubs can be sparse to over 80% cover, with some the following species reaching over 50% cover in some stands: Viola canadense, Poa pratensis, Symphoricarpos occidentalis
- may be a grazing disclimax in some situations, a climax community in others
- Thompson and Hansen 2002 suggest that at least some of these communities occur on sites that have been disturbed by long term heavy grazing
- heavy grazing can open up stands and allow invasion of Bromus inermis and Poa pratensis
- tolerent of poorly drained soils and periodic flooding (Thompson and Hansen 2002)
- round-leaved hawthorn is a long-lived species and copses may persist on the landscape for long periods of time

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Elaeagnus commutata Group

Elaeagnus commutata
silverberry
CEAB000060

Rank: **SU**

- minor Foothills and Montane type, ranked G2Q (NatureServe 2003)
- forms stringers on stream terraces
- Salix spp., Amelanchier alnifolia and Prunus virginiana often present
- Siverberry stringers do occur along Alberta Montane streams, but none have been looked at in detail
- Alberta community likely very similar to a Montana type considered "uncommon over a large range and occurs in a habitat prone to human-caused degradation" (Natureserve 2003)

Elaeagnus commutata / Pascopyrum smithii
silverberry / western wheat grass
CEAB000102

Rank: **S3**

- a small patch community of the Grassland Natural Region
- Elaeagnus commutata forms open thickets in mixedgrass
- often associated with Symphoricarpos occidentalis and Rosa woodsii
- a Northwest Great Plains community type, ranked G3? (NatureServe 2003)

Shrubland

Salix amygdaloides Group

Salix amygdaloides
peach-leaved willow
CEGL000947

Rank: **S1S2**

- a riparian community found in the Dry Mixedgrass Subregion
- occurs in as stringers in a variety of locations such as backwater areas, old meander channels and wetland margins or as clumps along water courses (Thompson and Hansen 2002)
- soils are usually Regasols or Chernozems,
- characterized by a short-statured canopy of peach-leaved willow (40 to 60% cover)
- yellow willow (Salix lutea) may be absent, but reaches up to 80% cover in some stands

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Salix athabascensis Group

Salix athabascensis string shrubland
Athabasca willow string shrubland
CEAB000048

Rank: **SP**

- Salix athabascensis is a dominant on low hummocks and incipient strings in fens in the Wood Buffalo area in wetlands influenced by gypsum dissolution
- co-dominant associates are Myrica gale, Betula glandulosa, Campylium stellatum, and Triglochin maritima (Timoney 1997)
- known from the whooping crane nesting area in the Northwest Territories.
- may also occur in Alberta's Boreal Forest Natural Region.

Salix bebbiana Group

Salix bebbiana / Cornus stolonifera
beaked willow / red-osier dogwood
CEAB000167

Rank: **S3?**

- a minor riparian type found thoughout the Grassland Natural Region as well as in the Central Parkland, Foothills Parkland and Montane subregons
- it is a major type in the Lower Foothills Subregion (Thompson and Hansen 2002)
- a riparian community of alluvial terraces and moist to wet soils such as near springs and seeps
- soils are dark brown to black Chernozems (Thompson and Hansen 2002)
- the tall shrub layer is dominated by beaked willow, with red-osier dogwood the dominant understory shrub

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Salix bebbiana / Rubus idaeus / Geranium richardsonii
Bebb's willow / wild red raspberry / wild white geranium
CEAB000014

Rank: **S2**

- groves dominated by Salix bebbiana found primarily in the Foothills Parkland (Wallis 1980)
- found on moderately to imperfectly drained sites
- significant tall herb component

Salix drummondiana Group

Salix drummondiana - Thalictrum venulosum
Drummond's willow - veiny meadow rue
CEAB000084

Rank: **S1**

- an Upper Subalpine community of subhygric to hygric sites bordering creeks (Achuff 1984)
- Salix barrattiana is also a common component of this community type
- has a lush herb understory with low bryophyte cover
- may be allied with a more common Salix - Deschampsia type

Shrubland

Salix drummondiana Group

Salix drummondiana / Scirpus microcarpus - Calamagrostis canadensis
Drummond's willow / small-fruited bulrush - bluejoint
CEAB000049

Rank: **S1**

- a Central Mixedwood riparian meadow bordering creeks (Timoney and Robinson 1998)
- found on hygric, poorly drained alluvial silty Regasol
- an early successional community of point bars

Salix lutea Group

Salix lutea / Cornus stolonifera
yellow willow / red-osier dogwood
CEAB000168

Rank: **S3?**

- a riparian community of the Grassland Natural Region
- forms dense bands on lower floodplain terraces, parallel to the channel
- soils are dark brown to black Chernozems (Thompson and Hansen 2002)
- the tall shrub layer is dominated by yellow willow, with red-osier dogwood the dominant understory shrub
- sensitive to grazing pressure

Sarcobatus vermiculatus Group

Sarcobatus vermiculatus / Pascopyrum smithii
greasewood / western wheat grass
CEAB000013

Rank: **S2S3**

- greasewood is geographically limited to the driest part of the brown soil zone, so this is a community type is restricted in Alberta to the Dry Mixedgrass Natural Subregion
- it is found on alluvial terraces on floodplains and alluvial fans in valleys where fluvial build-up has occurred over wet, alkaline or saline soils
- found on sites where "either overland flow or soil conditions (fine textured, poorly drained saline or alkaline) or a combination of both, provide a moisture regime that exceeds the indicent precipitation. In many situations, the fine textured soils have resulted in a perched water table." Thompson and Hansen 2002.
- often associated with fine-textured alkaline soils on alluviated or fluvial flats adjacent to water courses or at the base of badland slopes
- greasewood cover ranges from 20 to 60% (Thompson and Hansen 2002)
- western wheat grass tends to be the dominant herb (up to 98% cover), but was absent from some stands
- greaswood is always present, although sometimes with low cover
- can form extensive stands of scattered greasewood plants with a sparse cover of other species such as Atriplex argentea and Suaeda moquinii (Wershler and Wallis 1986)
- the herb layer is somewhat variable, with no species reported in Thompson and Hansen 2002 occuring in all stands, but western wheat grass was the most consistantly present.

Sarcobatus vermiculatus silt dune shrubland
greasewood silt dune shrubland
CEAB000015

Rank: **S1**

- on minor dune complexes of silt and salts that develop on the east shore of alkali lakes in the Dry Mixedgrass Natural Subregion
- Sarcobatus may have up to 50% cover
- other species present include: Chenopodium spp., Pascopyrum smithii
- these communities are vulnerable to invasion by exotic species such as Kochia scoparia, Chenopodium album, Bromus tectorum and Agropyron pectiniforme

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Dwarf Shrubland

Dryas integrifolia Group

Dryas integrifolia - Carex rupestris
northern white mountain avens - rock sedge
CEAB000024

Rank: **S1**

- steep, east-facing slopes on Subalpine moraine with seepage
- up to 40% unvegetated
- type H15 (Corns and Achuff 1982)
- may be allied with a similar type known from Montana and ranked as globally rare

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Dryas octopetala Group

Dryas octopetala - Polygonum viviparum
white mountain avens - alpine bistort
CEGL001894

Rank: **S1S2**

- an Alpine dwarf shrub community, known to occur in central Montana and as far north as Jasper National Park in Alberta
- found on mesic (possibly to subxeric) morainal and colluvial slopes
- sites are gently to steeply sloping of south and west aspect and solifluction is common
- information from Montana locations suggests that these communities are associated with moist sites on calcareous substrates
- Dryas octopetala forms mats of 30 to 60% cover
- Salix reticulata is common (2 to 25%) and may co-dominate the dwarf shrub layer
- the herb layer is sparse, usually less than 20% cover
- Polygonum viviparum is the dominant herb, although Astragalus alpinus may co-dominate in some stand
- Potentilla diversifolia, Silene acaulis and Luzula spicata are usually present, with low cover (.5 to 2%)
- a lichen layer dominated by Cetraria spp is present, but sparse (less than 10% cover)
- this is a subset of the Dryas octopetala - Salix nivalis - Silene acaulis (H1) type described by Corns and Achuff (1982)

Shrub Herbaceous

Artemisia cana Group

Artemisia cana - Atriplex nuttallii
silver sagebrush - Nuttail's atriplex
CEAB000156

Rank: **S2S3**

- found in the Dry Mixedgrass Subregion of southern Alberta associated with saline lowlands in the dry mixed prairie
- ccurs on imperfectly to poorly drained, level plains and depressional areas with periodic ponding of water and high sodicity
- this late seral to climax community type is associated with Saline Lowland and Blowout range sites
- soils are poorly developed saline Regosols or alkaline Solonetz, developed on fluvial and glacial fluvial parent materials
- textures range from silt loam to silt clay
- Artemisia cana averages 6.9% composition by weight (range 1.2-10.0%) and approximately 5.5% cover
- Atriplex nuttallii, sometimes with Agropyron dasystachyum, dominates the herb layer
- other prominent species include Bouteloua gracilis, Carex spp., Poa sandbergii, Stipa comata, Koeleria macrantha and Artemisia frigida
- appears to be an important community type for sage grouse due to the low plant stature and high cover of bare gorund (over 70%) (summarized from Holcroft Weerstra 2001)

Shrub Herbaceous

Artemisia cana Group

Artemisia cana - Sarcobatus vermiculatus / Stipa comata

silver sagebrush - greasewood / needle-and-thread

CEAB000155

Rank: **S1S2**

- described in Alberta in Dinosaur Provincial Park (Envirocon Ltd. and Hough, Stansbury and Assoc. Limited, no date)
- Artemisia cana and Sarcobatus vermiculatus each have a cover of approximately 6% and Stipa comata cover is approximately 10%
- occurs on steep (26°), north-facing slopes of eroding badlands but with less bare soil and rock (each 15% cover) than Silver Sagebrush/Nuttall's Atriplex Shrubland
- other prominent species include Koeleria macrantha, Agropyron sp., Bouteloua gracilis, Phlox hoodii and Anemone patens (summarized from Holcroft Weerstra 2001)

Artemisia cana / Festuca campestris - Stipa curtiseta

silver sagebrush / mountain rough fescue - western porcupine grass

CEAB000154

Rank: **S1?**

- a Mixedgrass Subregion community, recorded in the Cypress Hills of Alberta,
- occurs on a moderately steep, west-facing slope
- Festuca scabrella (campestris?) and Stipa curtiseta clearly dominated the community, each with 17% cover
- silver sagebrush was at 5% cover
- the dominant forb was Selaginella densa at 8% cover
- other common species included Koeleria macrantha, Artemisia ludoviciana, Antennaria parvifolia and Thermopsis rhombifolia (Holcroft Weerstra 2001)

Artemisia cana / Festuca idahoensis

silver sagebrush / Idaho fescue

CEAB000153

Rank: **SP**

- this community has been described along mountain streams in southwestern Montana, and at mid- to high elevations in the mountains and foothills of central and southwestern Montana, on alluvial outwash fans and terraces
- it may occur in Alberta where the ranges of silver sagebrush and Idaho fescue overlap, in the Cypress Hills area and in southwestern Alberta
- in Montana, it occurs in small areas (<2 ha) on deep, loamy, alluvial soils above 1,830 m elevation
- the shrub component, which generally does not exceed 15-23 % canopy cover, is dominated by Artemisia can
- there is high cover (30-40%) of Festuca idahoensis

Shrub Herbaceous

Artemisia cana Group

Artemisia cana / Stipa comata

silver sagebrush / needle-and-thread

CEAB000096

Rank: **S2S3**

- found in southern Alberta in the Dry Mixedgrass subregion, may also occur in the Mixedgrass subregion
- also found in northwestern Great Plains of Montana and the same or a similar type occurs in Wyoming
- may also occur in the grassland regions of Saskatchewan and northwestern North Dakota (Comer et al. 1999).
- generally occurs on well to rapidly drained, level to gently sloping terrain (1 to 17° recorded) and variable aspects.
- in Montana, it is found on benches to gently inclined slopes in the vicinity of breaklands.
- it occurs in similar habitats in Alberta, including old river terraces, badlands, ravine side slopes and valley walls, on slopes of 1-11° and variable aspects
- found on various parent materials, but mostly well drained, medium textured, often sandy, glacial drift and sandy alluvium
- soils are mostly Orthic Brown Chernozems that are loam, sand and sandy loam textured
- may represent the driest environment capable of supporting silver sagebrush
- consists of a herb stata of 75% or greater cover and a shrub strata usually with less than 25% cover
- Artemisia cana is clearly the dominant shrub, with average cover values of 5 to 25%.
- Stipa comata has high cover values (average approximately 30%) and is present at all sites
- Bouteloua gracilis is sometimes co-dominant & Koeleria macrantha, Agropyron smithii and Carex spp. tend to occur frequently
- Other common grasses include Calamovilfa longifolia and Poa sandbergii
- Forb species cover tends to be low with Artemisia frigida, Opuntia polyacantha, Heterotheca villosa, Sphaeralcea coccinea, Psoralea argophylla and Gaura coccinea occurring most fequently
- Muhlenbergia cuspidata, Calamovilfa longifolia, Sporobolus cryptandrus and Selaginella densa had high cover on some sites
- occurrences of this community tend to be relatively small in area and patchy in distribution.
- grazing intensities beyond light grazing result in a shift towards other community types
- heavy grazing or other disturbances could encourage the establishment of non-native weedy species (summarized from Weersra 1998)

Artemisia cana / Stipa comata - Calamovilfa longifolia

silver sagebrush / needle-and-thread - sand grass

CEAB000151

Rank: **S2S3**

- this community occurs on rapidly drained, very gentle to strong slopes and variable aspects in the Dry Mixedgrass Natural Subregion
- soils are developed on fluvial and eolian parent material
- it is an open shrubland, with Artemisia cana averaging 10.75% composition by weight (range 6-21%) or 30% cover
- Stipa comata generally dominates over Calamovilfa longifolia, but occasionally is common but not a co-dominant species
- other prominent species include Bouteloua gracilis, Koeleria macrantha, Carex stenophylla, Opuntia polyacantha, Psoralea lanceolata, Heterotheca villosa, Artemisia frigida, Achillea millefolium and Rosa woodsii

Artemisia cana / Stipa curtiseta - Carex spp.

silver sagebrush / western porcupine grass - sedge spp.

CEAB000152

Rank: **S1S2**

- described in the southeast corner of Alberta within the Dry Mixedgrass Subregion on north-facing slopes
- occurs on well to moderately well drained, non-saline Overflow range sites in the Brown soil zone
- soils are Orthic Brunisolic and tend to be clay loam textured, or occasionally loam to silty loam textured
- Artemisia cana cover was 4.3%, Stipa curtiseta dominated at 21%
- also prominent were Carex spp., Stipa comata, Agropyron smithii and Agropyron dasystachyum

Herbaceous

Artemisia frigida Group

Koeleria macrantha - Artemisia frigida - Linum lewisii
June grass - pasture sagewort - wild blue flax
CEAB000026

Rank: **S2S3**

- dry, Montane community of fluvial (fans and aprons), morainal (erosional scarps) and eolian (veneers) landforms
- found on moderately level to easterly or southerly, moderately sloping sites
- soils are subxeric to xeric, rapidly to well drained Orthic Regosols, Humic Regosols and Orthic Eutric Brunisols,
- they are generally coarse textured and calcareous
- unvegetated bare soil is common
- Koeleria macrantha (15-30%) is generally dominant, but the cover can vary widely depending upon summer precipitation
- Artemisia frigida, Linum lewisii, Antennaria nitida and Gaillardia aristata are characteristic
- The bryoid layer is not well developed (< 3%), with Tortula ruralis the most frequently occurring moss
- active deposition of loess may be an important factor in maintaining this community, particularly in Saskatchewan Crossing area
- role of fire is important
- type H6 (Corns and Achuff 1982, Achuff et al. 1986)

Artemisia norvegica Group

Antennaria lanata - Artemisia norvegica
woolly everlasting - mountain sagewort
CEAB000054

Rank: **S1**

- a community know from Alpine and Upper Subalpine sites on moraine in the Front Ranges (Achuff 1984)
- soils are mesic to subhygric, well to imperfectly drained Brunisols
- a species-rich community with Antennaria lanata and Artemisia norvegica usually dominant
- Sibbaldia procumbens, Erigeron peregrinus, Phleum alpinum, Polygonum viviparum and Veronica alpina are commonly present

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Artemisia norvegica - Mertensia paniculata - Leymus innovatus
mountain sagewort - tall lungwort - hairy wild rye
CEAB000055

Rank: **S1**

- a community know from Alpine and Upper Subalpine sites in the Front Ranges (Achuff 1984)
- soils are mesic to subhygric, imperfect to poorly drained Gleysols on the lower slopes of morainal and fluvial landforms
- a species-rich community with Artemisia norvegica, Mertensia paniculata and Leymus innovatus usually dominant
- Aconitum delphinifolium, Salix glauca, Epilolbium angustifolium, Polemonium viscosum, Erigeron peregrinus, Phleum alpinum and Polygonum viviparum are commonly present

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Herbaceous

Calamagrostis stricta Group

Calamagrostis stricta - Triglochin maritima string fen

narrow reed grass - seaside arrowgrass string fen

CEAB000160

Rank: **S1S3**

- part of a net-patterned salt marsh complex found in the Boreal Forest Natural Region
- ground water and runoff fed wetlands associated with Devonian Karstic rocks
- associated with saline surface water and creek or river valleys
- these patterned wetlands may develop only in areas with gradual surface water flow
- flarks (pools) are made up of diatom ponds, with strings made up of the narrow reed grass - seaside arrowgrass
- diatom ponds may be different from those described for gypsum areas (CEAB000162)

Calamovilfa longifolia Group

Calamovilfa longifolia - Stipa comata

sand grass - needle-and-thread

CEAB000098

Rank: **S3**

- a community type docmented in the Dry Mixedgrass Natural Subregon of Alberta (Adams et al. 1997)
- also known from sand areas in the central and northern Great Plains, ranging from Colorado and Nebraska, north to Wyoming and South Dakota.(Natureserve 2003)
- ranked G3 (CEGL001473 Natureserve 2003)
- restricted in Alberta to landfoms of eolian origin, primarily dune fields
- found ih Alberta on well drained sandy to sandy loam soils; probably orthic regosols, possibly also gleyed regosols (Adams et al.1997)
- on complex terrain of variable aspect, but usually less than 15% slope
- open vegetation with Calamovilfa longifolia (20 to 40% cover) and Stipa comata (15 to 30% cover) clearly dominant
- other graminoids commonly present are Bouteloua gracilis and Koeleria macrantha
- Rosa woodsii and Artemisia frigida are consistently present
- Sedges are usually absent, but Carex stenophylla may have significant cover
- Oryzopsis hymenoides and Sporobolus cryptandrus are given as common in the U. S. stands (Natureserve 2003), but were not noted in the Alberta ones
- stands tend to be small and are reported to be highly susceptible to invaision by exotic brome grasses such as Bromus tectorum (Natureserve 2003)

Carex limosa Group

Carex limosa - Scheuchzeria palustris / Sphagnum majus - S. jensenii - S. riparium

mud sedge - scheuchzeria / peat mosses

CEAB000031

Rank: **S1**

- a sphagnum-dominated, species-poor fen with shallow pools in the Upper Foothills Natural Subregion (Vitt et al. 1975)
- a complex of Sphagnum species that may be restricted to the Swan Hills area of Alberta

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Herbaceous

Carex limosa Group

Carex limosa - Scheuchzeria palustris / Sphagnum teres - S. subsecundum
mud sedge - scheuchzeria / thin-leaved peat moss
CEAB000113

Rank: **S1**

- a subhydric quaking wetland of the Dry Mixedwood Boreal Forest
- found in infilled morainal depressions with no surface drainage
- soils are organic (hydric fibrisol)
- Carex limosa is the most abundant forb, with cover up to 85%
- Scheuchzeria palustris is prominent, with up to 15% cover (and is an S3 species)
- the dominant peat mosses (Sphagnum teres and S. subsecundum) are an ususual combination and together have up to 75% cover
- brown sedge (Drepanocladus revolvens) is also abundant, with up to 50% cover
- there is only a sparse shrub/dwarf shrub layer
- the herb and moss layers are well developed

Carex nebrascensis Group

Carex nebrascensis
Nebraska sedge
CEAB000099

Rank: **S2**

- a community found in coulees of the Mixedgrass Natural Subregion
- Carex nebrascensis forms extensive, essentially pure colonies along stream shores and in alkali seepage areas
- Typha latifolia, Juncus balticus, Mentha arvensis, Epilobium palustre, Calamagrostis stricta and Eleocharis spp. may be present
- The soils are generally saturated for much of the growing season and may be subject to compaction by livestock (Natureserve 2002)

Carex oligosperma Group

Carex oligosperma / Sphagnum subsecundum
few-fruited sedge / twisted bog moss
CEAB000121

Rank: **S1S2**

- this fen community is found in the middle of linear seepage channels on sand in the Athabasca Plains Natural Subregion (Allen and Johnson 2000)
- the channels are likely seasonally flooded, with seepage just at surface most of the growing season
- few-fruited sedge and twisted bog moss almost totally dominiate the community
- water sedge (Carex aquatilis) and marsh hook moss (Drepanocladus exannulatus) occur in the lowest and wettest portions of the fen
- bluejoint (Calamagrostis canadensis) and wool-grass (Scirpus cyperinus) may be present on drier edges
- often with an outer ring of the Chamaedaphne calyculata - Kalmia polifolia / Cladina mitis community (CEAB000122)

Herbaceous

Carex pseudocyperus Group

Carex pseudocyperus - Calla palustris
cyperus-like sedge - water arum
CEAB000037

Rank: **S1S2**

- reported orignially form the Central Parkland and the southern fringe of the Dry Mixedwood Boreal Forest (Lewis, Dowding and Moss 1928)
- new studies have documented this community type in the Peace River Lowland Subregion as well
- C. pseudocyperus forms a definite, narrow band of vegetation at the edge of the open water around sloughs in the Central Parkland
- it also forms islets in stabilised beaver ponds where the water is shallow enough
- there is typically a significant C. diandra component
- Calla palustris forms floating mats at the edge of the Carex band

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Danthonia californica Group

Danthonia californica - Carex brevior
California oat grass - slender-beaked sedge
CEAB000100

Rank: **S2**

- a Dry Mixedgrass community from mesic to subhydric sites, flooded annually (Eastern Slopes Rangeland Seeds Ltd., 1995)
- Danthonia californica is dominant with an average cover of 50%, Carex brevior is also significant (average cover 20%)
- Galium boreale is usually a prominent species in this community

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Danthonia unispicata Group

Danthonia unispicata - Elymus lanceolatus - Pascopyrum smithii
one-spike oat grass - northern wheat grass - western wheat grass
CEAB000101

Rank: **S2**

- found in mesic depressions in the Dry Mixedgrass Subregion (Eastern Slopes Rangeland Seeds Ltd., 1995)
- sites may receive additional moisture during spring run-off
- the cover of Danthonia unispicata is variable, ranging from 25 to 50% cover in a 4 year monitoring project (Eastern Slopes Rangeland Seeds Ltd., 1995)
- variations may be tied to variations in annual precipitation
- Elymus lanceolatus and Pascopyrum smithii together average about 20% cover

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Elymus lanceolatus Group

Elymus lanceolatus - Antennaria parvifolia
northern wheat grass - small-leaved everlasting
CEAB000143

Rank: **S1**

- a Montane type found at woodland edges and former wooded sites in the Kootenay Plains area where it is a major community type (Wallis and Wershler 1981)
- occupies mid slopes (3 - 5%) with northerly and southerly aspects on alluvial fans
- soils are well drained with submesic moisture regimes
- ground cover of each of the codominant species, Agropyron dasystachyum and Antennaria parvifolia (nitida), generally reaches from 25 to 50%, although, in certain areas cover of Antennaria reaches 75%
- in some areas shrub species such as Rosa woodsii and Potentilla fruticosa have invaded these grasslands
- some areas are more open with bare soil and rock covering up to 45% and 25%, respectively

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Herbaceous

Elymus lanceolatus Group

Elymus lanceolatus - Artemisia dracunculus - Artemisia frigida

northern wheat grass - dragonwort - pasture sagewort

CEAB000144

Rank: **S1**

- occurs on nearly level, well-drained, submesic sites, at the toe edge of an alluvial fan in Kootenay Plains area (Wallis and Wershler 1981)
- Agropyron dasystachyum, Artemisia dracunculus, and Artemisia frigida contribute about 26 - 50%, 16 - 25%, and 16 - 25% to the ground cover, respectively
- Agropyron subsecundum and Koeleria macrantha are locally abundant
- additional species include Linum lewisii, Oxytropis campestre, Astragalus striatus, Potentilla pensylvanica, Antennaria nitida, Erigeron caespitosus, Orthocarpus luteus and Poa glauca

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Elymus lanceolatus - Artemisia frigida

northern wheatgrass - pasture sagewort

CEAB000025

Rank: **S2S3**

- xeric, steep, south-facing slopes in Montane
- found on colluvial, glacial and fluvial landforms on slopes subject to constant disturbance
- herb / dwarf shrub layer well developed (20 to 50% cover)
- sparse moss / lichen layer, usually less than 1%
- most abundant species are northern wheatgrass (5-50%), pasture sagewort (1-10%), June grass (Koeleria micrantha 2-10%) and common yarrow (Achillea millefolium <5%)
- up to 50% bare mineral soil
- dominance of northern wheatgrass characteristic
- type H7 (Corns and Achuff 1982, Achuff et al. 1986)

Elymus lanceolatus - Elymus trachycaulus

northern wheat grass - slender wheat grass

CEAB000142

Rank: **S1**

- a Montane community type described from a river terrace in the Kootenay Plains area (Wallis and Wershler 1981)
- soils are well drained with submesic moisture regimes
- Agropyron dasystachyum and Agropyron subsecundum codominate contributing about 50-75% to the ground cover
- Linum lewisii (5-15%) is the only abundant forb species
- additional species characterizing this community type (with very low cover) include Astragalus striatus, A. tenellus, Oxytropis sericea, Gentianella amarella, Achillea millefolium, Artemisia dracunculus, A. frigida, and Solidago decumbens

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Herbaceous

Elymus lanceolatus Group

Elymus lanceolatus - Muhlenbergia cuspidata

northern wheat grass - plains muhly

CEAB000145

Rank: **SP**

- this community type is associated with water eroded areas scattered throughout rolling topography of the Canadian mixed prairie (Coupland 1950)
- it is characterized by frequent bare spots, and dominated by Elymus lanceolatus (Agropyron dasystachyum) and Muhlenbergia cuspidata
- Agropyron smithii represents only a minor component of wheat grass' cover in this community, and together with northern wheat grass makes up 35.2 % of the total basal area
- Muhlenbergia cuspidata, contributes 18.2% of the total species cover
- the principal associated grasses and sedges are, Koeleria macrantha 8.1%, Bouteloua gracilis 13.0%,, Stipa comata 1.4%, S. curtiseta 1.4%, S. viridula 1.2%, Carex eleocharis 14.9% and C. filifolia 1.4% of the total basal area
- Artemisia frigida and Phlox hoodii were the most abundant forbs, making up 8.8% and 4.9% of the total basal area

Elymus lanceolatus - Pascopyrum smithii

northern wheat grass - western wheat grass

CEAB000146

Rank: **S2?**

- occurs on moderately well to well drained Solonetzic soils in the Dry Mixedgrass Subregion
- soils include Brown Solodized Solonetz and Brown Solonetz, with minor occurrences of Brown Solods, Brown Chernozems and Orthic Regosols
- the same community type inhabits steep, unstable mid-slopes with southerly aspects in the Peace River and Clear River canyons in the Dry Mixedwood Subregion (Adams 1981)
- there soils are Orthic Regosols with silty loamy texture, developed on morainal and colluvial materials
- additional species in the Milk River region include Artemisia frigida, Bouteloua gracilis, Stipa comata, Poa pratensis and Koeleria macrantha
- Carex spp., Koeleria macrantha, Stipa curtiseta, Artemisia frigida and Stipa viridula characterize sites in the Peace River region

Elymus lanceolatus - Stipa comata

northern wheat grass - needle-and-thread

CEAB000147

Rank: **S1S2**

- a community type of the Montane, Dry Mixedgrass and possibly the Foothills Fescue subregions
- occurs on the toe edge of alluvial fans, with well-drained soils characterized by submesic moisture regimes in the Montane
- in the Dry Mixedgrass it is found on undulating to gently rolling areas with medium textured soils of dark-brown soil, usually on well-drained soils (slope 1 - 4%)
- co-dominance of Elymus lanceolatus (Agropyron dasystachyum) and Stipa comata is characteristic
- important species on Montane sites include Artemisia frigida (16 - 25%), Koeleria macrantha (6 - 15%), and Agropyron subsecundum (6 - 15%)
- in the Dry Mixedgrass, Stipa curtiseta is prominent and subdominant grasses and sedges are Bouteloua gracilis, Koeleria macrantha, Carex filifolia, C. eleocharis and C. heliophila. Carex eleocharis may reach the same basal cover as Elymus lanceolatus.
- grasslands in southwestern Alberta are also dominated by Elymus lanceolatus, Stipa comata, and S. curtiseta but also include some Pascopyrum smithii and Festuca idahoensis.

Herbaceous

Elymus trachycaulus Group

Elymus trachycaulus - Carex atherodes
slender wheat grass - awned sedge
CEAB000087

Rank: **S1**

- a Peace River Parkland community found in low, moist flat areas
- Stipa curtiseta is rare or lacking
- one of three faciations of grassland recognized by Moss (1952) for the Peace River Parkland

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Elymus trachycaulus - Distichlis stricta
slender wheat grass - salt grass
CEAB000148

Rank: **S1**

This community type occupies small areas with eroded Solods and saline seeps on glaciolacustrine materials on the Salt River escarpment in Wood Buffalo National Park (Schwarz 1994, Schwarz and Wein 1997). Sites occur on southerly aspects at 210 m elevation. Soils are moderately fine textured and rapidly drained Dark Brown Solods and saline Regosols. This community is characterized by relatively small number of species, including Symphoricarpos occidentalis, Agropyron trachycaulum, Distichlis stricta, Koeleria macrantha, Spartina gracilis, Poa juncifolia and Carex siccata.

Elymus trachycaulus - Hierochloe odorata
slender wheat grass - sweet grass
CEAB000149

Rank: **SU**

This community type occurs in the Boreal Region of northwestern Alberta (Child Lake, High Level and Hay River) (Fairbarns 1990). It occupies the wettest and least saline end of the moisture and salinity gradients characterizing saline meadows of northwestern Alberta. Agropyron trachycaulum and Hierochloe odorata dominate, while Carex spp., Rosa acicularis and Symphoricarpos albus represent some of the more abundant species. Achillea millefolium, Agrostis scabra, Antennaria parviflora, Astragalus dasyglottis, Galium boreale, Geum triflorum, Hieracium umbellatum, Lactuca pulchella, Viola adunca and some halophytic species are some of the less abundant species characterizing this community type.

Elymus trachycaulus - Koeleria macrantha
slender wheat grass - June grass
CEAB000150

Rank: **SU**

- occupies level salt plains of the Peace River Lowlands Subregion (Raup 1935)
- soils are moderately well to rapidly drained with mostly subxeric moisture regimes
- Elymus trachycaulus (Agropyron trachycaulum) and Koeleria macrantha dominate the community
- subdominant species include Juniperus horizontalis, Hierochloe odorata, Deschampsia caespitosa, Danthonia intermedia, Schizachne purpurascens and Agrostis scabra (Raup 1935)
- grasslands outside Wood Buffalo National Park include a number of species not mentioned in Raup (1935), such as Helictotrichon hookeri, Carex pensylvanica, Bromus inermis, Artemisia frigida, Stipa curtiseta, Muhlenbergia richardsonis, Festuca scabrella, and Carex obtusata.

Elymus trachycaulus - Stipa spp.
slender wheat grass - needle grass species
CEAB000086

Rank: **S1**

- found on imperfectly drained sites of level to slightly undulating, solonetzic soils in the Peace River Parkland
- Carex species include: C. siccata (foenea), C. obtusata, C. xerantica and C. eleocharis (Wilkinson 1981)
- equivalent to Moss' (1952) Agropyron trachycaulum - Stipa curtiseta type.
- an upland type, with few remnants due to extensive cultivation in the region
- Danthonia intermedia types in the British Columbia Peace River parkland area are all cultivated (Pojar 1982)

Herbaceous

Festuca altaica Group

Festuca altaica - Deschampsia caespitosa
northern rough fescue - tufted hair grass
CEAB000116

Rank: **S1**

- a Subalpine community type usually found on north-facing elevated alluvial terraces (Lane 2001)
- northern rough fescue is the dominant grass averaging 37% cover and tufted hair grass is also significant, averaging 24% cover
- monkshood (Acontium delphinifolium), small-flowered penstemon (Penstemon procerus) and tall lungwort (Mertensia paniculata) are characteristic species
- low snow depth or cold air drainage may favour grasslands and inhibit shrub invasion

Festuca altaica - Leymus innovatus
northern rough fescue - hairy wild rye
CEAB000061

Rank: **S1**

- a Subalpine grassland on lower south-facing slopes (Bork 1991)
- often down-slope from dry pine stands
- preliminary information suggests that this is the main F. altaica grassland type

Festuca campestris Group

Danthonia parryi - Festuca idahoensis - Festuca campestris
Parry oat grass - Idaho fescue - mountain rough fescue
CEAB000059

Rank: **SU**

- generally found on subxeric to submesic, rapidly well drained sites with a southerly aspect in the Montane (Willoughby et al. 1998)
- either Danthonia parryi or Festuca idahoensis are dominant
- Festuca campestris is usually prominent, but with lesser cover than the dominant grasses
- dry pockets within this community may have extensive Juniperus communis and Arctostaphylos uva-ursi cove

Festuca campestris - Deschampsia caespitosa
mountain rough fescue - tufted hair grass
CEAB000117

Rank: **S1**

- an Upper Foothills community type usually found on moderately well-drained, subhygric, rich sites on fluvial and glaciofluvial landforms (Willoughby 2000)
- mountain rough fescue is the dominant grass averaging 17% cover and tufted hair grass is also significant, averaging 12% cover
- long-bracted sedge (Carex athrostchya), monkshood (Acontium delphinifolium) and tall lungwort (Mertensia paniculata) are characteristic species

Festuca campestris - Leymus innovatus (Elymus innovatus)
mountain rough fescue - hairy wild rye
CEAB000118

Rank: **S2S3**

- this community is found on level to gently south-facing mesic to submesic, well-drained sites in the Montane and possibly Upper Foothills Natural Subregions (Willoughby 2000)
- mountain rough fescue is the dominant grass, averaging 21% cover
- hairy wild rye (average cover 5%) and slender wheat grass (Agropyron trachycaulum) (average cover 7%) are also significant grass components
- an open shrub cover (average 4%) of shrubby cinquefoil (Potentilla fruticosa) is characteristic
- other characteristic species include Artemisia frigida, A. ludoviciana, Oxytropis monticola, O. sericea and Kobresia myosuroides

Herbaceous

Festuca hallii Group

Festuca hallii

plain's rough fescue
CEAB000104

Rank: **S1**

- level terrain and lower slopes of undulating topography, inclined upland, hummocky areas on mesic sites in the Central Parkland and Northern Fescue Grassland
- on variable aspects: north-facing in southern part of range, south-facing in northern part of range
- found on Black and Dark Brown Chernozemic soils of loam or clay loam texture under modal conditions
- this CT has a dense herb layer and may also have a sparse shrub layer
- shrub cover is absent or low (less than 25%) and the herb layer covers the remainder
- Festuca hallii is clearly the dominant species followed by Stipa curtiseta at distinctly lower cover
- these are the only two species that are found consistently within this CT, althought other gaminoids or forbs may be present
- shrubs if present may include common wild rose and/or prairie rose
- the characteristic deep accumulation of litter due to the resistance of plains rough fescue to decomposition results in no or very little bare ground
- depending on the position on the landscape and historical land use, this CT can be relatively small in area or cover large tracts of land
- it can be patchy, e.g., on knob and kettle topography, or continuous on undulating terrain (summarized from Weerstra and Holcroft Weerstra 1998)

Festuca hallii - Calamovilfa longifolia

plains rough fescue - sand grass
CEAB000033

Rank: **S1**

- a Central Parkland and Northern Fescue Grassland plant community
- found on undulating sandy soils of glaciolacustrine and glaciofluvial deposits, typically reworked by wind
- sites tend to be rapidly to well drained, subxeric and drought prone
- found predominantly on sandy Chernozems with some Regosols (Dark Brown Chernozems)
- the shrub layer has generally less than 25% cover and the herb layer 75% or greater
- plains rough fescue is the most abundant species, followed by sand grass, green needle grass, early bluegrass and creeping juniper
- these, along with pasture sagewort, are found consistently within this community type
- shrub cover is moderate and may include prickly rose and prairie rose in addition to creeping juniper
- occurrences of this community tend to be uncommon, small in area and patchy in distribution (summarized from Weerstra and Holcroft Weerstra 1998)

Festuca hallii - Carex spp. / Arctostaphylos uva-ursi

plains rough fescue - upland sedge / bearberry
CEAB000034

Rank: **S1**

- found on shallow soils of hill tops and steep south to south west facing coulee slopes in the Central Parkland and Northern Fescue Grassland
- xeric to mesic sites, frequently sandy
- there are three vegetation strata: the herb, dwarf shrub and shrub layers
- plains rough fescue and bearberry are constant species and the most abundant species
- shrub cover is low and tends to include creeping juniper and saskatoon
- some stands have a high enough cover of bearberry (>25%) to be be considered dwarf shrublands
- low upland sedges make up the majority of the Carex species
- occurrences of this community tend to be small in area and patchy in distribution (summarized from Weerstra and Holcroft Weerstra 1998)
- a similar community may be present in the Montane Natural Subregion

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Herbaceous

Festuca hallii Group

Festuca hallii - Koeleria macrantha / Juniperus horizontalis / forbs

plains rough fescue - June grass / juniper / forbs
CEAB000035

Rank: **S2**

- subxeric, steep, south and south west facing coulee slopes in the Central Parkland and Northern Fescue Grassland
- soils are Orthic Regosols, generally derived from glaciolacustrine parent materials
- soil texture tends to be clay over silty clay loam to clay
- this CT includes two strata: a herb layer of 75% or greater cover and a shrub layer with less than 25% cover
- Festuca hallii, Koeleria macrantha and Juniperus horizontalis are the most abundant species and are always present
- Thermopsis rhombifolia, Eriogonum flavum, Erigeron caespitosus and Hedysarum alpinum are often present and can have significant cover
- depending on the position on the landscape and historical land use, this CT can be relatively small in area or cover large tracts of land
- it can be patchy in distribution or continuous on undulating terrain (summarized from Weerstra and Holcroft Weerstra 1998)

Festuca hallii - Stipa curtiseta

plain's rough fescue - western porcupine grass
CEAB000030

Rank: **S2**

- a community of the Central Parkland and Northern Fescue Grassland
- found on level to undulating topography and hummocky terrain, on mesic to submesic sites with moderately well-drained soils
- usually on south- and west-facing slopes on crests of knolls, upper slopes, mid-slopes or lower slopes, depending on the moisture level
- soils are generally Black and Dark Brown Chernozems derived from lacustrine, morainal or alluvial parent materials
- can be associated with Solonetzic soils
- the texture is generally a sandy loam, clay loam to silty clay loam and soil pH (B horizon) is from 6.5 to 7.0
- a stable climax type of drier sites or grazing- modified Festuca hallii sites; light grazing may sometimes contribute to the development of this community type
- represents a climax community on slightly drier sites (mesic to submesic) compared to the pure Festuca hallii type (CEAB000104)
- on slopes, it is positioned above the plains rough fescue type
- Festuca hallii is generally the most abundant species, followed by Stipa curtiseta
- these two species plus Koeleria macrantha are found consistently within this community type
- shrub cover is low or absent and may include prairie rose
- the accumulation of litter due to the resistance of plains rough fescue to decomposition results in little bare ground
- the above information is summarized from Weerstra 1998 for the Festuca hallii - Stipa curtiseta community
- two additional communities, Stipa curtiseta - Festuca hallii and Festuca hallii - Stipa curtiseta - Carex spp. also outlined in Weerstra and Holcroft Weerstra 1998 are not detailed but may be subtypes of this CT

Herbaceous

Festuca hallii Group

Festuca hallii - Stipa viridula

plains rough fescue - green needle grass

CEAB000032

Rank: **S1**

- found in the Central Parkland and Northern Fescue Grassland
- occurs on steep south- and southwest-facing upper to lower escarpment slopes
- associated with submesic to subxeric soil moisture regimes and moderately well-drained soils
- soils are silty loams, derived from morainal veneer over bedrock, and consist of Gleyed Dark Brown Chernozems
- this community has only one vegetation stratum: the herb layer and is characterised by drought tolerant species
- Festuca hallii is the most abundant species, followed by Stipa viridula (Weerstra and Holcroft Weerstra 1998)
- Stipa curtiseta, Koeleria macrantha, Calamovilfa longifolia, Artemisia ludoviciana are found consistently
- other graminoid species may be present, including Agropyron dasystachyum and Bouteloua gracilis
- other forb species may include Geum triflorum, Heterotheca villosa, Thermopsis rhombifolia, Comandra umbellata, Senecio canus, Opuntia polyacantha, Lithospermum incisum, Astragalus crassicarpus and A. tenellus.
- Mineral soil cover is low at 5%
- this community tends to be uncommon and small in area and patchy in distribution (summarized from Weerstra and Holcroft Weerstra 1998)

Festuca idahoensis Group

Festuca idahoensis - Elymus lanceolatus - Stipa comata

Idaho fescue - northern wheat grass - needle-and-thread

CEAB000129

Rank: **S3**

- a Foothills Fescue Subregion community, known in Alberta only from the Milk River Ridge
- it is found on crests, upper and mid-slopes of morainal landforms
- slopes are mostly gentle to moderate but it does also occur on strong slopes
- it is found on various aspects; all but steep north-facing slopes
- soils are black chernozems
- there is a dense herbaceous layer (averaging 85%) and a sparse lichen and moss layer (average 10%) with only minor bare soil less than 3%
- shrubs tend to be scattered as individuals or in patches
- western snowberry, prairie and wood rose are the most abundant shrubs, usually found in scattered patches
- minor amounts of silverberry, pincherry and saskatoon occur as localized patches and there are scattered individuals of silver sage
- silvery lupine, golden bean, fringed sage and tufted white aster are the principle forbs
- grasses and forbs particularly diverse
- adequate litter cover essential to maintaining the community
- Idaho fescue cover decreases with grazing pressure

Glyceria striata Group

Glyceria striata

fowl manna grass

CEAB000105

Rank: **SU**

- found along slightly alkaline seepage springs in the Grassland Natural Region (Wallis 1977)
- a type with little documentation, more information is needed to evaluate its status

Herbaceous

Juncus drummondii Group

Juncus drummondii - Carex saxatilis - Ranunculus nivalis
Drummond's rush - rocky-ground sedge - snow buttercup
CEAB000062

Rank: **S1?**

- mesic Alpine meadow
- other species present include Carex haydeniana, Equisetum arvense, Poa alpina and Salix glauca (Kondla 1978)

Juncus filiformis Group

Juncus filiformis / Sphagnum spp.
thread rush / peat moss
CEAB000119

Rank: **S1S2**

- this is an Upper Foothills community that is found in basins in forests and as small patches in Picea mariana peatlands
- water is at or near the surface
- Juncus filiformis is the dominant graminoid at about 50% cover, but Carex aquatilis is also prominent at about 40% cover (Wallis and Wershler 2001)
- the cover of peat moss is over 50% with Sphagnum magellanicum being one of the prominent species

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Lupinus nootkatensis Group

Lupinus nootkatensis meadow
Nootka lupine meadow
CEAB000064

Rank: **S2?**

- Upper Subalpine seepage meadow
- a main range community associated with quartzite substrates

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Muhlenbergia asperifolia Group

Muhlenbergia asperifolia - Scirpus nevadensis - Distichlis stricta
scratch grass - Nevada bulrush - salt grass
CEAB000158

Rank: **S1S2**

- a hypersaline dry meadow of the Grassland and Parkland natural regions
- usually associated with sandy soils subject to disturbance
- scratch grass is occasionally dominant, but more typically the community is made of a mix of scratch grass, Nevada bulrush and salt grass

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Pascopyrum smithii Group

Carex stenophylla - Pascopyrum smithii
low sedge - western wheat grass
CEAB000132

Rank: **S1**

- this community may also occur in the Peace River Parkland on steep slopes (25 - 50%) with southerly aspects, on very rapidly drained soils with subxeric moisture regimes
- in the Grassland occurrences, western wheat grass (43%) and low sedge (57%) dominate, accompanied by only three additional species, Chenopodium pratericola (4%), Vicia americana (1%) and Taraxacum officinale (<1%)
- the Peace River slope community is more sparsely vegetated (ca. 30% vegetation cover) dominated by western wheat grass (7.6%) and Carex spp. (4.6%), and accompanied by species such as Amelanchier alnifolia, Symphoricarpos albus, Koeleria macrantha, Stipa curtiseta, and S. comata

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Herbaceous

Pascopyrum smithii Group

Distichlis stricta - Pascopyrum smithii

salt grass - western wheat grass

CEAB000133

Rank: **S2**

This community type occurs in saline wetlands in the Grassland and Parkland regions of eastern Alberta (Wallis 1990). This "saline dry meadow" community is transitional between the driest portion of the halophytic communities and the semi-halophytic communities. Numerous upland species accompanied the two dominant grasses, including Aster ericoides and Grindelia squarrosa. The various locations recorded for this community included Altario, Birch Lake, Capt. Eyre Lake Sand Plain North, Irma-Jarrow Lakes, Kenilworth Lake, Neutral Hills South, Old Channel Lake Springs, and Ribstone South. Wallis (1990) described the Spartina gracilis - Agropyron smithii community type as an open sandy site variant of the Distichlis stricta - Agropyron smithii community.

Koeleria macrantha - Pascopyrum smithii

June grass - western wheat grass

CEAB000134

Rank: **S1S2**

- occurs on drier upland and exposed sites in the Peace River Parkland Subregion
- also found in the Central Parkland Subregion on level areas and lower slopes with xeric Brown and Black Solonetzic soils
- Koeleria macrantha, Agropyron albicans and Pascopyrum smithii are the dominant grasses in the Peace River Parkland, accompanied by other grass and forb species such as Agrostis hiemalis, Poa interior, Stipa columbiana, S. curtiseta, Elymus innovatus, A. trachycaulum, and A. albicans.
- in the Central Parkland, Koeleria macrantha (59%), Agropyron smithii (46%) Selaginella densa (59%), Carex eleocharis (35%), Poa secunda (15%), Grindelia squarrosa (15%) and Distichlis stricta (8%) are the most abundant species

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Pascopyrum smithii - Artemisia ludoviciana

western wheat grass - prairie sagewort

CEAB000135

Rank: **S1S2**

This community type occurs on sand plains in the Suffield National Wildlife Area, Dry Mixedgrass Subregion, where it occupies depressions and gentle slopes (2-9%) with variable aspects (Adams et al. 1997). Soils are Orthic Regosols developed on morainal materials and include imperfectly to well drained sandy soils, well to rapidly drained loamy sands and well drained sandy loams. Agropyron smithii and Artemisia ludoviciana dominate with 42% and 9% ground cover, respectively. Other notable species include Carex stenophylla (6%), Poa pratensis (4%), Grindelia squarrosa and Chenopodium pratericola (last two with very low covers).

Pascopyrum smithii - Artemisia tilesii - Artemisia frigida

western wheat grass - Herriot's sagewort - pasture sagewort

CEAB000136

Rank: **S1**

This community type occupies slump sites on colluvial and morainal materials on steep slopes (mid-slope position) in the Peace River area (Dry Mixedwood Subregion) (Adams 1981). It occurs just upslope of areas occupied by the Agropyron dasystachyum - Agropyron smithii - Carex spp. - Koeleria macrantha community type. On the upper (less steep) slope it is bordered by the Agropyron smithii - Stipa viridula - Carex spp. - Vicia americana community type. In contrast to the adjacent community types, which are primary range for livestock and primary winter range for mule deer, these steep slopes re-colonized by Agropyron smithii, Artemisia tilesii and Artemisia frigida were rarely used for grazing by either cattle or wildlife.

Herbaceous

Pascopyrum smithii Group

Pascopyrum smithii - Atriplex nuttallii

western wheat grass - atriplex

CEAB000137

Rank: **S1**

This community type occurs on moderate slopes on the northeast side of an un-named coulee in the Manyberries badlands (Mixedgrass Subregion) (elevation ranges 968 - 1066 m) (Smith 1993). Soils of the general area are Brown Solonetz with loam textures derived from moderately calcareous till, overlaying shales and sandstones. This community is characterized by having 75% to 80% bare ground. Agropyron smithii and Atriplex nuttallii codominant in this community. Koeleria macrantha and Artemisia frigida are also abundant on one site sampled. Other characteristic species included Phlox hoodii, Gutierrezia sarothrae, Gaura coccinea, Grindelia squarrosa, Haplopappus nuttallii, Chrysothamnus nauseosus, Oenothera caespitosa, Erigeron caespitosus, and Carex filifolia (locally abundant in sandier patches).

Pascopyrum smithii - Bouteloua gracilis

western wheat grass - blue grama

CEAB000138

Rank: **S1**

- a Dry Mixedgrass community of well drained Brown Solonetz and Brown Solodized Solonetz soils
- found occasionally on Orthic Brown Chernozems with loam and clay loam textures developed on gently inclined and undulating moraine
- Agropyron smithii (28.1% composition), Poa sandbergii (13.1% composition), Koeleria macrantha (6.6% composition), Stipa comata (4.4% composition), Bouteloua gracilis (3.9% composition), and Selaginella densa (29.3% composition) dominate
- there may be up to 40% bare mineral soil

Pascopyrum smithii - Hordeum jubatum

western wheat grass - foxtail barley

CEAB000139

Rank: **S1**

This community occurs in the northernmost portion of a large saline wetland located within the Neutral Hills Central site, Northern Fescue Subregion (Wallis 1990). It represents the driest vegetation sequence along a moisture gradient adjacent to the Distichlis stricta community type, which occupies somewhat wetter soils.

Pascopyrum smithii - Pyrrocoma uniflora

western wheat grass - one-flowered ironplant

CEAB000140

Rank: **S1**

This community type was found only at one site in the vicinity of alkali grass (Puccinellia nuttalliana) depressions at Whirlpool Point in the Kootenay Plains area (Wallis and Wershler 1981). It occurs in areas with high water tables. Vegetation cover is low, with considerable bare ground. Scattered forbs include Cerastium arvense, Anemone multifida, Astragalus agrestis, Achillea millefolium, Senecio canus, Taraxacum officinale and Aster sibiricus.

Herbaceous

Pascopyrum smithii Group

Pascopyrum smithii - Stipa comata - Bouteloua gracilis

western wheat grass - needle-and-thread - blue grama

CEAB000141

Rank: **S2S3**

This community type occurs in the western portion of the Milk River Natural Area (elevation about 1000m) on west- and some east-facing colluvial slopes (slope 10 - 20%) (Brierley et al.1989). Soils are well drained, fine to coarse textured, Orthic Brown Chernozems with submesic moisture regimes. The same community type also occurs on gentle slopes (<15%) with variable aspects within the Suffield National Wildlife Area (Dry Mixedgrass Subregion) (Adams et al. 1997). Sites supporting this community type include: middle terraces with well drained, sandy Orthic Brown Chernozems; lower terraces with imperfectly drained, sandy loam Orthic Regosols and Orthic Gleysols; valley walls with well drained sandy Orthic Brown Chernozems; hilly outwash deposits with well drained, loamy sand Orthic Brown Chernozems; hummocky moraine with well drained, loam sandy textured Orthic Brown Chernozems; and, inclined morainal slopes with sandy loam Orthic and Rego Brown Chernozems. Finally, this community type may also occur within the Cypress Hills Montane and Mixedgrass Subregions on rapidly to well drained soils with subxeric to mesic moisture regimes (community #36 in this report). In the Milk River Natural Area this community is dominated by Stipa comata/S. spartea, Agropyron smithii and Selaginella densa (average percent compositional cover of 23%, 22%, and 34%, respectively), accompanied by Bouteloua gracilis, Carex spp., Koeleria macrantha, Poa sandbergii, Calamovilfa longifolia, Phlox hoodii and numerous other species (Brierley et al.1989). Within the Suffield National Wildlife Area, Agropyron smithii, Stipa comata and Carex stenophylla dominate, contributing on average 21%, 31% and 19% to the ground cover, respectively. Additional species include Bouteloua gracilis (3%), Chenopodium pratericola (4%), Descurainia pinnata (1%), Lactuca pulchella, Lygodesmia juncea and Opuntia polyacantha (low covers). Analysis of plots from the ESIS database (this report) indicates that this community type found within the Cypress Hills Montane, Dry Mixedgrass and Mixedgrass Subregions of southeastern Alberta is dominated by Agropyron smithii (16%), Stipa comata (9.7%), Bouteloua gracilis (9.7%) and Selaginella densa (35%), accompanied by less abundant species such as Koeleria macrantha, Carex filifolia, Agropyron dasystachyum and Stipa viridula.

Pseudoroegneria spicata Group

Pseudoroegneria spicata

bluebunch wheat grass

CEAB000079

Rank: **S1**

- described for the Waterton Lakes National Park by Achuff et al. (1997) (Type H42)
- associated with subxeric to mesic, moderately sloping, easterly and southerly oriented sites, in the lower Subalpine Subregion
- soils are well drained Brunisols and Regosols developed on fluvial, colluvial and morainal landforms.
- Pseudoroegneria spicata dominates this successionally mature community (30 - 40% cover)
- other main grasses include Bromus marginatus, Phleum pratense and Poa palustris
- main forbs include Achillea millefolium, Fragaria virginiana, Galium boreale and Penstemon confertus
- other common species are Aster conspicuous, Campanula rotundifolia, Epilobium angustifolium, Hedysarum sulphurescens, Lathyrus ochroleucus and Thalictrum occidentale

Herbaceous

Pseudoroegneria spicata Group

Pseudoroegneria spicata - Carex obtusata

bluebunch wheat grass - blunt sedge

CEAB000131

Rank: **S1**

- occupies middle and upper slopes with mostly southerly aspects (slope range: 4 - 48%) within the Montane and Subalpine subregions (elevation range 606 m -1618 m) in southwestern Alberta (Willoughby et al. 1998)
- soils are very rapidly to well-drained, with mostly subxeric moisture regimes and submesotrophic to mesotrophic nutrient regimes
- Amelanchier alnifolia (4.2%) and Symphoricarpos occidentalis (6.2%) are characteristic shrubs
- the dominant grass and sedge species, Agropyron spicatum, Carex obtusata, Koeleria macrantha and Festuca campestris, make up 11.6%, 19.8%, 5.4%, and 4.2% of the canopy cover, respectively
- other significant species include Arctostaphylos uva-ursi, Rosa arkansana and Artemisia frigida

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Pseudoroegneria spicata - Festuca campestris

bluebunch wheat grass - mountain rough fescue

CEAB000080

Rank: **S1S2**

- found on subxeric to mesic Foothills Parkland, Subalpine and Montane sites (elevation range: 1430 - 1867 m),
- on gentle to steep slopes with mostly southerly aspects
- soils are well to very rapidly drained, with subxeric to mesic moisture regimes and submesotrophic to mesotrophic nutrient regimes
- Pseudoroegneria spicata and Festuca campestris dominate with 8.8% and 14.9% cover, respectively
- other common species include Festuca idahoensis (7.4%), Koeleria macrantha (4.1%), Danthonia parryi (3.9%), Galium boreale (3.4%), Aster conspicuous (3.6%), Lupinus sericeus (2.8%), Fragaria virginiana (2.5%), Monarda fistulosa (2%), Geranium viscosissimum (2%) and Anemone multifida (1%)
- common shrub species include Amelanchier alnifolia (6.1%), Rosa acicularis (5.5%) and Spiraea betulifolia (3.1%)

Pseudoroegneria spicata - Leymus innovatus - Aster conspicuus

bluebunch wheat grass - hairy wild rye - showy aster

CEAB000081

Rank: **S1**

- occupies small areas on dry, southwest facing slopes, with rapidly drained soils, within the Montane Subregion and possibly into the lower Subalpine
- soils are predominantly Orthic Regosols with xeric moisture regimes, developed on colluvial and glacial landforms
- shrub cover is low, with Juniperus communis and Rosa acicularis occurring sporadically
- Pseudoroegneria spicata (15 - 30% cover), Leymus innovatus (10 - 30%) and Koeleria cristata (3 - 10%) dominate the community
- common forbs include Aster conspicuous (3 - 5% cover), Oxytropis splendens (<8%), Antennaria nitida/rosea (<2%) and Cerastium arvense (<2%).
- this successionally mature community is limited in extent to slopes above Hillsdale meadow in Banff (type H19 Corns and Achuff 1982)

Herbaceous

Puccinellia nuttalliana Group

Atriplex subspicata - Puccinellia nuttalliana - Triglochin palustris string fen

spearscale saltbrush - Nuttall's salt-meadow grass - slender arrow grass

CEAB000161

Rank: **S1S3**

- part of a net-patterned salt marsh complex found in the Boreal Forest Natural Region
- ground water and runoff fed wetlands associated with Devonian Karstic rocks
- associated with saline surface water and creek or river valleys
- these patterned wetlands may develop only in areas with gradual surface water flow
- flarks (pools) are made up of diatom ponds, with strings made up of spearscale saltbrush - Nuttall's salt-meadow grass - slender arrow grass
- diatom ponds may be different from those described for gypsum areas (CEAB000162)

Puccinellia nuttalliana

Nuttall's salt-meadow grass

CEGL001799

Rank: **S3?**

- found in the Dry Mixedgrass Subregion in "saline or alkali basins, swales, pond and lake margins and seep areas" (Thompson and Hansen 2002)
- also found in the Central Parkland Natural Subregion, usually associated with a perched water table (Wallis 1990)
- the water table tends to be at or just below the surface
- soils are Brown Chernozems over alluvium and tend to be alakline with high concentrations of soluble salts
- Nuttall's salt-meadow grass is clearly dominant, with salt grass (Distichlis stricta) prominent in some stands but absent in others
- few other species are found in this community, but may include foxtail barley (Hordeum jubatum), prairie bulrush (Scirpus pludosus), samphire (Salicornia europaea) or seaside arrow-grass (Triglochin maritima)

Rumex venosus Group

Rumex venosus

wild begonia

CEAB000165

Rank: **S2S3**

- a Dry Mixedgrass community of sandy areas
- found in sem-active sand dune areas, on the leeward side of dunes in areas of active sand accumulation
- tend to be on mid to upper slopes with a northerly aspect
- wild begonia is clearly dominant, at about 40% cover, with open sand averaging 55% cover (Coenen and Bentz 2003)

Schizachyrium scoparium Group

Schizachyrium scoparium - Calamovilfa longifolia

little bluestem - sand grass

CEAB000109

Rank: **S2**

- found in the Mixedgrass and Foothills Fescue Natural Subregions
- on barren slopes at the overlap of the Laurentian and Cordilleran tills
- along the major glacial spillway east of the Porcupine Hills
- Bouteloua gracilis, Koeleria macrantha, Artemisia frigida and Liatris punctata constant species
- C. longifolia, Helictotrichon hookeri, Calamagrostis montanensis, Petalostemon purpureum and Helianthus petiolaris are the differential species of the drier habitat type (Jaques 1979)

Herbaceous

Schizachyrium scoparium Group

Schizachyrium scoparium - Festuca campestris

little bluestem - mountain rough fescue

CEAB000002

Rank: **S1?**

- on subirrigated channel deposits south-west of Mud Lake in the Mixedgrass and Foothills Fescue Natural Subregions
- possibly equivalent to the S. scoparium - Poa interior type of Wallis (1980), a community type based on very preliminary information
- Bouteloua gracilis, Koeleria macrantha, Artemisia frigida and Liatris punctata are constant species
- Pascopyrum smithii (Agropyron smithii), Festuca campestris (scabrella), Stipa comata indicate a wetter type (Jaques 1979)

Stipa comata Group

Stipa comata - Festuca spp.

needle-and-thread - fescues

CEAB000111

Rank: **S1**

- a Dry Mixedgrass community found on the east-facing slope of a volcanic extrusion
- dominant species include Stipa comata, Festuca saximontana and F. idahoensis
- other species include: Bouteloua gracilis, Poa sp., Allium textile, Koeleria macrantha , Geum triflorum, Carex filifolia, Vicia americana and Besseya wyomingensis.

Stipa curtiseta Group

Stipa curtiseta - S. viridula - Carex spp.

western porcupine grass - green needle grass - sedges

CEAB000089

Rank: **S2S3**

- south west, south and south east facing 5 to 45% slopes
- found on the upper slopes in narrow canyons, down to terraces in wider valleys (Adams 1981)
- a community type essentially restricted to the slopes of river valleys in the Peace River Parkland and area

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Stipa richardsonii Group

Stipa richardsonii - Koeleria macrantha - Antennaria parvifolia

Richardson needlegrass - June grass - small-leaved everlasting

CEAB000028

Rank: **S2S3**

- a Front Range Montane community
- found in forest openings and at forest edges on dry, steep slopes of south aspects
- type H13 (Corns and Achuff 1982, Achuff et al. 1986)
- type A5. Selaginella densa / Stipa richardsonii (Willoughby et. al 1998)

Sparsely Vegetated

Artemisia longifolia Group

Artemisia longifolia - Chrysothamnus nauseosus
long-leaved sagewort - rabbitbrush
CEAB000097

Rank: **S1**

- a badland community of the Dry Mixedgrass with up to 90% bare ground
- associated species include Artemisia cana, Thermopsis rhombifolia, Hymenoxys richardsonii, Gutierrezia sarothrae, Gaura coccinea, Koeleria macrantha, Eriogonum flavum, Stephanomeria runcinata and Calamagrostis montanensis (Smith 1993)

Erigeron radicatus Group

Erigeron radicatus - Phlox hoodii - Eriogonum flavum
dwarf fleabane - moss phlox - yellow umbrella-plant
CEAB000103

Rank: **S1**

- forms a distinct band at the edge of rocky outcrops and on knolls of hills
- a community of the Dry Mixedgrass Natural Subregion

Juniperus horizontalis Group

Juniperus horizontalis / (Koeleria macrantha) / Cladina mitis
creeping juniper / (June grass) / green reindeer lichen
CEAB000088

Rank: **S1S2**

- stabilized blowouts in Central Parkland sand dunes
- Cladina mitis can contribute up to 20% of the cover (Fehr 1984)
- Koeleria macrantha is not always a significant component of the community

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Juniperus horizontalis / Koeleria macrantha - Eriogonum flavum pediment vegetation
creeping juniper / June grass - yellow umbrella-plant pediment vegetation
CEAB000007

Rank: **S1S2**

- pediment vegetation on Bearpaw shale in the Dry Mixedgrass (Smith 1993)
- extensive juniper mats that may be on small, loose, silt dunes up to 2 m tall
- 25 to 50% bare ground with scattered Eriogonum flavum

Leymus mollis Group

Leymus mollis - Tanacetum bipinnatum ssp. huronense shoreline dune
American dune grass - Indian tansy shoreline dune
CEAB000172

Rank: **S1**

- a plant community of the Athabasca Plain Natural Subregion
- found in Alberta only along the north shore of Lake Athabasca on slightly exposed lake beaches
- occurs on low, stabilizing dunes located above the active wave zone and past a zone of dry, unvegetated sand
- an early pioneer community with up to 60% bare sand and subject to sand movement
- American dune grass is dominant, with up to 25% cover
- Indian tansy is constant, but cover varies from very low (less than 2%) up to 50%
- likely sensitive to changes in disturbance regime

Sparsely Vegetated

Oryzopsis hymenoides Group

Oryzopsis hymenoides - Leymus canadensis
Indian rice grass - Canada wild rye
CEAB000107

Rank: **S2?**

- sand blowouts / active sand dunes in the Dry Mixedgrass Natural Subregion (Wallis 1980)
- restricted to areas recently disturbed by wind erosion
- prone to invasion by non-native species such as Russian thistle (Salsola kali), ridge-seeded spurge (Euphorbia glyptosperma) and sweet clover (Melilotus sp.)

Penstemon ellipticus Group

Penstemon ellipticus talus barren
creeping beardtongue talus barren
CEAB000065

Rank: **S1?**

- an Alpine community found on unstable scree in slightly protected locations (Griffiths 1982)
- the rubbly talus scree occurs on steep mountain faces
- bare rock rubble and blocks predominate and there is no continuos vegetation cover
- a surprising diversity of species with low cover occur in scattered patches
- the main species include Penstemon ellipticus, Artemisia michauxiana, Agropyron scribneri, Festuca baffinensis, Saussurea densa

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Puccinellia nuttalliana Group

Puccinellia nuttalliana - Suaeda calceoliformis - Spergularia marina barren
Nuttall's salt-meadow grass - western sea-blite - salt-marsh sand spurry barren
CEAB000046

Rank: **S2**

- a community associated with hyper-saline salt springs, and documented in the Central Mixedwood (Timoney and Robinson 1991)
- springs flowing out of glaciofluvial meltwater deposits form barrens with high salt concentrations
- soils are sandy Orthic Regosols with a xeric moisture regime resulting in droughty conditions
- vegetation is in sparse patches of herbs and grasses
- herb patches about .1 m tall cover about 3%, grass patches about .3 m tall cover about 4%
- Puccinellia nuttalliana, Suaeda calceoliformis and Spergularia marina are the most common species

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Sparsely Vegetated

Salicornia europaea Group

Salicornia europaea

samphire

CEAB000047

Rank: **S2**

- a hypersaline marsh of the Grassland, Parkland and Boreal natural regions of Alberta
- occurs over a broad geographic range and has been recorded from Nebraska, South Dakota, North Dakota, Minnesota, Montana, Colorado, and north into Saskatchewan (NatureServe 2001).
- although a widely distributed type, it has very specific habitat needs and is ranked G2G3 (NatureServe 2001)
- associated with highly alkali wetlands, semipermanent alkali lakes and exposed mud of alkali flats (NatureServe 2001)
- often forms a ring or patch near the centre of saline depressions and is typically found at the edge of non-vegetated mudflats (Wallis 1990)
- dependent on hydrological processes such as seasonal inundation, evaporative drydown, and mineral accumulation resulting in extreme salinty that few species can tolerate (NatureServe 2001)
- the principle salts are sulfates and chlorides of sodium and magnesium (Stewart and Kantrud 1972 as referenced in NatureServe 2001)
- Salicornia is frequent in saline areas of the dark brown soils zone but less common in the black and brown soils zones of Alberta on silt loam to clay soils
- this is a sparsely vegetated community, typically a pure band of Salicornia of 25% or less basal cover with up to 95% unvegetated silt loam or clay flats
- if present, associated species may include Puccinellia nutalliana, Distichlis stricta, Hordeum jubatum, Triglochin maritima, Chenopodium ruburm and Suaeda erecta
- during drying trends, other species such as Spergularia salina and Chenopodium salinum move in
- this community often grades into graminoids on the upslope side, commonly Puccinellia nuttalliana - Distichlis stricta community on coarse textured soils
- in some areas Salicornia becomes codominant in a transition zone with the dominants of the adjacent upslope community (usually Triglochin maritima, Puccinellia nuttalliana, Distichlis stricta and/or Hordeum jubatum)
- the Salicornia europea community is a small patch community, often forming a ring or patch near the centre of saline depressions

Scirpus nevadensis Group

Scirpus nevadensis - (Triglochin maritima)

Nevada bulrush - (seaside arrow-grass)

CEAB000092

Rank: **S2S3**

- a saline emergent marsh of the Grassland and Parkland Natural Regions
- restricted to sandy saline shores
- usually with very open growth (Wallis 1990)

Spartina gracilis Group

Spartina gracilis - (Pascopyrum smithii)

alkali cord grass - (western wheat grass)

CEAB000093

Rank: **S2S3**

- a saline dry meadow of the Grassland and Parkland natural regions (Wallis 1990)
- typically on open sandy sites, may be associated with slightly alkaline seepage springs

Sparsely Vegetated

Sporobolus cryptandrus Group

Sporobolus cryptandrus semi-active dune
sand dropseed semi-active dune
CEAB000110

Rank: **S2**

- a Dry Mixedgrass and Central Parkland community of partially stabilized sand dunes
- soils are coarse textured, rapidly drained sands with almost no organic matter (Thorpe and Goodwin 1993)
- usually found on the south face of dunes
- sand movement buries some plants and exposes the roots of others
- few species can persist in these dry and unstable sites
- a successional community that needs open sand to colonize

Suaeda moquinii Group

Suaeda moquinii - Atriplex suckleyi sparsely vegetated badland slopes
Moquin's sea-blite - endolepis sparsely vegetated badland slopes
CEAB000112

Rank: **S2?**

- badland community of crumbly shale or clay slopes along lower valleys in the Dry Mixedgrass Natural Subregions (Wershler and Wallis 1986)
- sparse cover of Suaeda moquinii
- scattered Atriplex suckleyi

Triglochin maritima Group

Triglochin maritima
seaside arrow-grass
CEAB000094

Rank: **S2?**

- a Grassland and Parkland saline emergent marsh
- typically found on fine sand to sandy clay type
- forms a pure band of Triglochin maritima, usually with less than 20% cover
- Puccinellia nuttalliana is the principle associated species (Wallis 1990)

Aquatic

Diatom ponds Group

Cymbella pusilla - Mastogloia smithii - Nitzschia palea
diatom ponds
CEAB000162

Rank: **S1S3**

- shallow (less than 50 cm deep) ponds found in the Boreal Forest Natural Region and possibly in the Rocky Mountain Natural Region
- associated with bulrush marshes and may evaporate away by the end of a summer
- strongly influenced by dissolution of gypsum, neutral to alkaline and high in sulphates (Timoney et al. 1997)
- few aquatic macrophytes
- a benthic diatom community give the ponds a characteristic yellow color from the air, changing to pink then white as the water dries up

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Aquatic

Emergent aquatic Group

Hippuris vulgaris - Ranunculus circinatus - Callitriche sp.
common mare's-tail - white water crowfoot - water-starwort
CEAB000106

Rank: **SU**

- an aquatic community of standing water along creeks of the Grassland Natural Region (Wallis 1977)
- forms dense mats of Hippuris vulgaris, Ranunculus circinatus, Callitriche sp. in semi-permanent pools along creeks with alkali content
- noted from pools along a single creek so more information needed to verify the validity of the type
- aquatic communities are not well studied

Floating-leaved aquatic Group

Glyceria borealis - Sium suave - Sparganium angustifolium
northern manna grass - water parsnip - narrow leaved bur-reed
CEAB000171

Rank: **S1?**

- an aquatic community of slow moving Canadian Shield streams (Allen et al. 2003)
- found in about 2.5 m deep water as a band on both sides of La Butte Creek
- northern manna grass forms dense patches with up to 90% cover
- water parsnip and narrow leaved bur-reed contribute about 10% cover each to the community
- pondweeds such as clasping-leaved pondweed (Potamogeton richardsonii) are more prominent in adjacent deep water but intergrade with this community in places

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Submergent aquatic Group

Isoetes bolanderi
Bolander's quillwort
CEAB000159

Rank: **S1**

- a submerged aquatic community of small oligotrophic lakes in the Subalpine Natural Subregion
- found in shallow water on non-calcareous silt/sand substrate (Brunton 2003, in prep.)
- Bolander's quillwort is the dominate species, and often the only species of significant cover in the community

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Isoetes echinospora
northern quillwort
CEAB000036

Rank: **S1**

- a community of the Boreal Forest and Canadian Shield Natural Regions
- forms bands in shallow water on sandy substrate
- likely requires protected sites with little wave action
- essentially a monotypic community, although seedlings of other aquatic species may be present

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Ruppia cirrhoso
widgeon-grass
CEAB000091

Rank: **S2**

- a Grassland and Parkland aquatic community, endemic to the Great Plains
- characteristic of hypersaline ponds (Wallis 1990)
- Ruppia maritima in Moss

Forest/Woodland

Picea mariana Group

Picea mariana southernmost population
Black spruce southernmost population
CEAB000123
Rank: **SU**

- southernmost population of Picea mariana in Alberta is found in the Bragg Creek area
- significant due to the disjunct nature of the community

Pinus albicaulis Group

Abies lasiocarpa - Pinus albicaulis - Picea engelmannii / Vaccinium scoparium
subalpine fir - whitebark pine - Engelmann spruce / grouseberry
CEAB000124
Rank: **S3**

- characteristic of mesic subalpine sites over a wide elevational range
- pint blister rust is having a significant impact on these communities

Populus tremuloides Group

Populus tremuloides - P. balsamifera / Alnus viridus / Calamagrostis canadensis
aspen - balsam poplar / green alder / bluejoint
CEAB000085
Rank: **S3?**

- an open, mature Foothills community type with a tree canopy cover of less than 15%
- alder and bluejoint dominate the understory (Willoughby and Downing 1995)

Pseudotsuga menziesii Group

Pseudotsuga menziesii / Leymus innovatus
Douglas-fir / hairy wild rye
CEAB000125
Rank: **S3?**

- found on xeric, south-facing slopes in the Montane Natural Subregion
- type C1 (Corns and Achuff 1982)
- prescribed burning required to maintain the community type

Shrubland

Betula pumila Group

Betula pumila - Salix spp. / Carex spp.
dwarf birch - willow / sedges
CEAB000126
Rank: **S3?**

- Parkland string fens (sand plain fens in Wallis 1990)
- disjunct community, extremely localized
- further work is needed to characterize these communities

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APPENDIX 1
PLANT COMMUNITIES OF CONSERVATION CONCERN, BY NATURAL REGION

The following tables list the plant community types on the preliminary tracking list by natural region, in alphabetical order of scientific name. Some community types occur in more than one natural region, and so appear in more than one table.

BOREAL FOREST NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000029	*Amelanchier alnifolia / Arctostaphylos uva-ursi / Oryzopsis pungens*	saskatoon / common bearberry / northern rice grass	S2S3	Shrubland
CEAB000161	*Atriplex subspicata - Puccinellia nuttalliana - Triglochin palustris* string fen	spearscale saltbrush - Nuttall's salt-meadow grass - slender arrow grass	S1S3	Herbaceous
CEAB000160	*Calamagrostis stricta - Triglochin maritima* string fen	narrow reed grass - seaside arrowgrass sting fen	S1S3	Herbaceous
CEAB000113	*Carex limosa - Scheuchzeria palustris / Sphagnum teres - S. subsecundum*	mud sedge - scheuchzeria / peat moss	S1	Herbaceous
CEAB000037	*Carex pseudocyperus - Calla palustris*	cypress-like sedge - water arum	S1S2	Herbaceous
CEAB000162	*Cymbella pusilla - Mastogloia smithii - Nitzschia palea*	diatom ponds	S1S3	Aquatic
CEAB000148	*Elymus trachycaulus - Distichlis stricta*	slender wheat grass - salt grass	S1	Herbaceous
CEAB000149	*Elymus trachycaulus - Hierochloe odorata*	slender wheat grass - sweet grass	SU	Herbaceous
CEAB000150	*Elymus trachycaulus - Koeleria macrantha*	slender wheat grass - June grass	SU	Herbaceous
CEAB000036	*Isoetes echinospora*	northern quillwort	S1	Aquatic
CEAB000038	*Larix laricina / Carex prairea*	tamarack / prairie sedge	S1	Forest/ Woodland
CEAB000040	*Picea glauca / Alnus tenuifolia – Betula neoalaskana / Equisetum pratense / Hylocomium splendens*	white spruce / river alder - Alaska birch / meadow horsetail / stair-step moss	S3	Forest/ Woodland
CEAB000041	*Picea glauca / Cetraria islandica*	white spruce / lichen	S1?	Forest/ Woodland
CEAB000042	*Populus balsamifera / Alnus tenuifolia - Cornus stolonifera / Equisetum pratense*	balsam poplar / river alder - red-osier dogwood / meadow horsetail	S3	Forest/ Woodland
CEAB000114	*Populus balsamifera / Rhamnus alnifolia / Equisetum arvense*	balsam poplar / alder-leaved buckthorn	S1	Forest/ Woodland
CEAB000043	*Populus balsamifera / Viburnum opulus / Matteuccia struthiopteris*	balsam poplar / high-bush cranberry / ostrich fern	S1S2	Forest/ Woodland
CEAB000170	*Populus tremuloides / Rosa acicularis / Apocynum androsaemifolium*	aspen / prickly rose / spreading dogbane	SU	Forest/ Woodland
CEAB000044	*Populus tremuloides / Rubus parviflorus / Aralia nudicaulis*	aspen / thimbleberry / wild sarsaparilla	S2S3	Forest/ Woodland
CEAB000045	*Populus tremuloides / Salix bebbiana-Corylus cornuta / Calamagrostis canadensis – Matteuccia struthiopteris*	aspen / Bebb's willow - beaked hazelnut / bluejoint - ostrich fern	S1	Forest/ Woodland
CEAB000046	*Puccinellia nuttalliana – Suaeda calceoliformis – Spergularia marina barren*	Nuttall's salt-meadow grass - western sea-blite - salt-marsh sand spurry barren	S2	Sparsely Vegetated
CEAB000047	*Salicornia europaea*	samphire	S2	Sparsely Vegetated
CEAB000048	*Salix athabascensis string shrubland*	Athabasca willow string shrubland	SP	Shrubland

BOREAL FOREST NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000049	*Salix drummondiana / Scirpus microcarpus – Calamagrostis canadensis*	Drummond's willow / small-fruited bulrush - bluejoint	S1	Shrubland

ROCKY MOUNTAIN NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000050	*Abies lasiocarpa – Pinus albicaulis – Picea engelmannii / Empetrum nigrum*	subalpine fir - whitebark pine - Engelmann spruce / crowberry	S2	Forest/ Woodland
CEAB000051	*Abies lasiocarpa – Pinus albicaulis / Xerophyllum tenax*	subalpine fir - whitebark pine / beargrass	S1S2	Forest/ Woodland
CEAB000052	*Abies lasiocarpa – Pinus flexilis – Populus tremuloides / Thalictrum venulosum*	subalpine fir - limber pine - aspen / veiny meadow rue	S2?	Forest/ Woodland
CEAB000054	*Antennaria lanata – Artemisia norvegica*	woolly everlasting - mountain sagewort	S1	Herbaceous
CEAB000055	*Artemisia norvegica – Mertensia paniculata – Leymus innovatus*	mountain sagewort - tall lungwort - hairy wild rye	S1	Herbaceous
CEAB000008	*Artemisia tridentata - Amelanchier alnifolia*	big sagebrush - saskatoon slope community	S1	Shrubland
CEAB000010	*Artemisia tridentata – Rhamnus alnifolia*	big sagebrush - alder-leaved buckthorn	S1	Shrubland
CEAB000056	*Betula occidentalis - Amelanchier alnifolia / Artemisia campestris - Elymus lanceolatus (Agropyron dasystachyum)*	water birch - saskatoon / plains wormwood - northern wheat grass	S1	Shrubland
CEAB000016	*Betula papyrifera / Betula occidentalis / Arctostaphylos uva-ursi*	white birch / water birch / common bearberry	S1	Forest/ Woodland
CEAB000059	*Danthonia parryi – Festuca idahoensis - Festuca campestris*	Parry oat grass - Idaho fescue - mountain rough fescue	SU	Herbaceous
CEAB000024	*Dryas integrifolia – Carex rupestris*	white mountain avens - rock sedge	S1	Dwarf Shrubland
CEGL001894	*Dryas octopetala - Polygonum viviparum*	white mountain avens - alpine bistort	S1S2 G3?	Dwarf Shrubland
CEAB000060	*Elaeagnus commutata*	silverberry	SU	Shrubland
CEAB000143	*Elymus lanceolatus - Antennaria parviflora*	northern wheat grass - small-leaved everlasting	S1	Herbaceous
CEAB000144	*Elymus lanceolatus - Artemisia dracunculus - Artemisia frigida*	northern wheat grass - dragonwort - pasture sagewort	S1	Herbaceous
CEAB000025	*Elymus lanceolatus - Artemisia frigida*	northern wheat grass - pasture sagewort	S2S3	Herbaceous
CEAB000142	*Elymus lanceolatus - Elymus trachycaulus*	northern wheat grass - slender wheat grass	S1	Herbaceous
CEAB000147	*Elymus lanceolatus - Stipa comata*	northern wheat grass - needle-and-thread	S1S2	Herbaceous
CEAB000150	*Elymus trachycaulus - Koeleria macrantha*	slender wheat grass - June grass	SU	Herbaceous
CEAB000116	*Festuca altaica - Deschampsia caespitosa*	northern rough fescue - tufted hair grass	S1	Herbaceous
CEAB000061	*Festuca altaica - Leymus innovatus (Elymus innovatus)*	northern rough fescue - hairy wild rye	S1	Herbaceous
CEAB000118	*Festuca campestris - Leymus innovatus (Elymus innovatus)*	mountain rough fescue - hairy wild rye	S2S3	Herbaceous
CEAB000159	*Isoetes bolanderi*	Bolander's quillwort	S1	Aquatic

ROCKY MOUNTAIN NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000062	*Juncus drummondii – Carex saxatilis – Ranunculus nivalis*	Drummond's rush - rocky-ground sedge - snow buttercup	S1?	Herbaceous
CEAB000026	*Koeleria macrantha – Artemisia frigida – Linum lewisii*	June grass - pasture sagewort - wild blue flax	S2S3	Herbaceous
CEAB000063	*Larix lyallii / Luzula hitchcockii*	subalpine larch / smooth wood rush	S2?	Forest/ Woodland
CEAB000003	*Larix occidentalis / Calamagrostis rubescens*	western larch / pine reed grass	S1	Forest/ Woodland
CEAB000064	*Lupinus nootkatensis meadow*	Nootka lupine meadow	S2?	Herbaceous
CEAB000140	*Pascopyrum smithii - Pyrrocoma uniflora*	western wheat grass - one-flowered ironplant	S1	Herbaceous
CEAB000065	*Penstemon ellipticus talus barren*	creeping beardtongue talus barren	S1?	Sparsely Vegetated
CEAB000017	*Picea engelmannii - Abies lasiocarpa / Dryas octopetala*	Engelmann spruce - subalpine fir / white mountain avens	S2S3	Forest/ Woodland
CEAB000066	*Picea engelmannii – Abies lasiocarpa / Salix planifolia / Hylocomium splendens*	Engelmann spruce - subalpine fir / flat-leaved willow / stair-step moss	S1?	Forest/ Woodland
CEAB000018	*Picea engelmannii – Abies lasiocarpa / Salix vestita / Cassiope tetragona*	Engelmann spruce - subalpine fir / rock willow / white mountain-heather	S2	Forest/ Woodland
CEAB000019	*Picea engelmannii / Leymus innovatus*	Engelmann spruce / hairy wild rye	S2	Forest/ Woodland
CEAB000067	*Picea engelmannii / Salix drummondiana*	Engelmann spruce / Drummond's willow	S1?	Forest/ Woodland
CEAB000068	*Picea engelmannii / Salix vestita*	Engelmann spruce / rock willow	S2?	Forest/ Woodland
CEAB000069	*Picea glauca / Betula pumila - Salix bebbiana / Carex eburnea*	white spruce / dwarf birch - Bebb's willow / bristle-leaved sedge	S1?	Forest/ Woodland
CEAB000020	*Picea glauca / Rosa acicularis / Thuidium abietinum*	white spruce / prickly rose / fern moss	S1	Forest/ Woodland
CEAB000021	*Picea glauca / Shepherdia canadensis / Thuidium abietinum*	white spruce / Canada buffaloberry / fern moss	S2	Forest/ Woodland
CEAB000070	*Picea glauca / Thuidium abietinum*	white spruce / fern moss	S2S3	Forest/ Woodland
CEAB000071	*Pinus albicaulis - Abies lasiocarpa / Luzula hitchcockii - Vaccinium myrtillus*	whitebark pine - subalpine fir / smooth wood rush - low bilberry	S1S2	Forest/ Woodland
CEAB000072	*Pinus albicaulis – Picea engelmannii / Dryas octopetala*	whitebark pine - Engelmann spruce / white mountain avens	S1	Forest/ Woodland
CEAB000073	*Pinus albicaulis – Pinus contorta / Juniperus communis – Leymus innovatus – Linnaea borealis*	whitebark pine - lodgepole pine / ground juniper - hairy wild rye	S2S3	Forest/ Woodland
CEAB000074	*Pinus albicaulis / Juniperus communis – Arctostaphylos uva ursi*	whitebark pine / ground juniper - common bearberry	S2S3	Forest/ Woodland
CEAB000130	*Pinus contorta / Ledum groenlandicum / Vaccinium scoparium / Pleurozium schreberi*	lodgepole pine / common Labrador tea / grouseberry / Schreber's moss	S1?	Forest/ Woodland
CEAB000075	*Pinus flexilis - Pseudotsuga menziesii / Juniperus spp. / Arctostaphylos uva-ursi*	limber pine - Douglas-fir / juniper species / common bearberry	S2	Forest/ Woodland
CEAB000076	*Pinus flexilis / Arctostaphylos uva ursi - Juniperus horizontalis*	limber pine / common bearberry - creeping juniper	S2S3	Forest/ Woodland
CEGL000815	*Pinus flexilis scree*	Limber pine scree	S1S2	Forest/ Woodland

ROCKY MOUNTAIN NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000077	*Populus balsamifera - P. tremuloides / Alopecurus alpinus - Calamagrostis canadensis*	balsam poplar - aspen / alpine foxtail - bluejoint	S1S2	Forest/ Woodland
CEAB000023	*Populus tremuloides / Leymus innovatus – Aster conspicuus avalanche community*	aspen / hairy wild rye - showy aster	S2	Forest/ Woodland
CEAB000022	*Populus tremuloides / Menziesia ferruginea*	aspen / false azalea	S1	Forest/ Woodland
CEAB000078	*Populus tremuloides / Rubus parviflorus*	aspen / thimbleberry	S2	Forest/ Woodland
CEAB000079	*Pseudoroegneria spicata*	bluebunch wheat grass	S1	Herbaceous
CEAB000131	*Pseudoroegneria spicata - Carex obtusata*	bluebunch wheat grass - blunt sedge	S1	Herbaceous
CEAB000080	*Pseudoroegneria spicata - Festuca campestris*	bluebunch wheat grass – mountain rough fescue	S1S2	Herbaceous
CEAB000081	*Pseudoroegneria spicata – Leymus innovatus – Aster conspicuus*	bluebunch wheat grass - hairy wild rye - showy aster	S1	Herbaceous
CEAB000082	*Pseudotsuga menziesii - Pinus flexilis / Juniperus communis / Festuca campestris*	Douglas-fir - limber pine / ground juniper / mountain rough fescue	S2S3	Forest/ Woodland
CEAB000167	*Salix bebbiana / Cornus stolonifera*	beaked willow / red-osier dogwood	S3?	Shrubland
CEAB000084	*Salix drummondiana – Thalictrum venulosum*	Drummond's willow - veiny meadow rue	S1	Shrubland
CEAB000028	*Stipa richardsonii – Koeleria macrantha – Antennaria parvifolia*	Richardson's needle grass - June grass - small-leaved everlasting	S2S3	Herbaceous

FOOTHILLS NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000115	*Betula glandulosa / Festuca campestris*	bog birch / mountain rough fescue	S2S3	Shrubland
CEAB000031	*Carex limosa – Scheuchzeria palustris / Sphagnum majus - S. jensenii - S. riparium*	mud sedge - scheuchzeria / peat mosses	S1	Herbaceous
CEAB000060	*Elaeagnus commutata*	silverberry	S2	Shrubland
CEAB000117	*Festuca campestris - Deschampsia caespitosa*	mountain rough fescue - tufted hair grass	S1	Herbaceous
CEAB000118	*Festuca campestris - Leymus innovatus (Elymus innovatus)*	mountain rough fescue - hairy wild rye	S2S3	Herbaceous
CEAB000119	*Juncus filiformis / Sphagnum spp.*	thread rush / peat moss	S1S2	Herbaceous
CEAB000044	*Populus tremuloides / Rubus parviflorus / Aralia nudicaulis*	aspen / thimbleberry / wild sarsaparilla	S2S3	Forest/ Woodland

CANADIAN SHIELD NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000120	*Andromeda polifolia / Sarracenia purpurea / Sphagnum angustifolium*	bog rosemary / pitcher-plant / peat moss	S1S2	Shrubland
CEAB000121	*Carex oligosperma / Sphagnum subsecundum*	few-fruited sedge / twisted bog moss	S1S2	Herbaceous
CEAB000122	*Chamaedaphne calyculata - Kalmia polifolia / Cladina mitis*	leatherleaf - northern laurel / green reindeer lichen	S1S2	Shrubland

CEAB000171	*Glyceria borealis - Sium suave - Sparganium angustifolium*	northern manna grass - water parsnip - narrow leaved bur-reed	S1?	Aquatic
CEAB000036	*Isoetes echinospora*	northern quillwort	S1	Aquatic
CEAB000172	*Leymus mollis - Tanacetum bipinnatum* ssp. *huronense* shoreline dune	American dune grass - Indian tansy shoreline dune	S1	Sparsely Vegetated

PARKLAND NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000095	*Acer negundo / Prunus virginiana*	Manitoba maple / choke cherry	S1S2	Forest/ Woodland
CEAB000169	*Betula occidentalis*	water birch	SU	Shrubland
CEAB000037	*Carex pseudocyperus - Calla palustris*	cypress-like sedge - water arum	S1S2	Herbaceous
CEAB000132	*Carex stenophylla - Pascopyrum smithii*	low sedge - western wheat grass	S1	Herbaceous
CEAB000133	*Distichlis stricta - Pascopyrum smithii*	salt grass - western wheat grass	S2	Herbaceous
CEAB000087	*Elymus trachycaulus - Carex atherodes*	slender wheat grass - awned sedge	S1	Herbaceous
CEAB000148	*Elymus trachycaulus - Distichlis stricta*	slender wheat grass - salt grass	S1	Herbaceous
CEAB000086	*Elymus trachycaulus - Stipa spp.*	slender wheat grass - needle grass species	S1	Herbaceous
CEAB000104	*Festuca hallii*	plain's rough fescue	S2	Herbaceous
CEAB000033	*Festuca hallii - Calamovilfa longifolia*	plain's rough fescue - sand grass	S1	Herbaceous
CEAB000034	*Festuca hallii - Carex spp. / Arctostaphylos uva-ursi*	plain's rough fescue - sedges / common bearberry	S1	Herbaceous
CEAB000035	*Festuca hallii - Koeleria macrantha / Juniperus horizontalis / forbs*	plain's rough fescue - June grass / creeping juniper / forbs	S1	Herbaceous
CEAB000030	*Festuca hallii - Stipa curtiseta*	plain's rough fescue - western porcupine grass	S2	Herbaceous
CEAB000032	*Festuca hallii - Stipa viridula*	plain's rough fescue - green needle grass / forbs	S1	Herbaceous
CEAB000088	*Juniperus horizontalis / (Koeleria macrantha) / Cladina mitis*	creeping juniper - (June grass) / green reindeer lichen	S1S2	Sparsely Vegetated
CEAB000134	*Koeleria macrantha - Pascopyrum smithii*	June grass - western wheat grass	S1S2	Herbaceous
CEAB000158	*Muhlenbergia asperifolia - Scirpus nevadensis - Distichlis stricta*	scratch grass - Nevada bulrush - salt grass	S1S2	Herbaceous
CEAB000136	*Pascopyrum smithii - Artemisia tilesii - Artemisia frigida*	western wheat grass - Herriot's sagewort - pasture sagewort	S1	Herbaceous
CEAB000139	*Pascopyrum smithii - Hordeum jubatum*	western wheat grass - foxtail barley	S1	Herbaceous
CEAB000078	*Populus tremuloides / Rubus parviflorus*	aspen / thimbleberry	S2	Forest/ Woodland
CEAB000080	*Pseudoroegneria spicata - Festuca campestris*	bluebunch wheat grass - mountain rough fescue	S1S2	Herbaceous
CEGL001799	*Puccinellia nuttalliana*	Nuttall's salt-meadow grass	S3? G3?	Herbaceous
CEAB000091	*Ruppia cirrhosa*	widgeon-grass	S2	Aquatic
CEAB000047	*Salicornia europaea*	samphire	S2	Sparsely Vegetated
CEAB000167	*Salix bebbiana / Cornus stolonifera*	beaked willow / red-osier dogwood	S3?	Shrubland
CEAB000014	*Salix bebbiana / Rubus idaeus / Geranium richardsonii*	Bebb's willow / wild red raspberry / wild white geranium	S2	Shrubland
CEAB000092	*Scirpus nevadensis - (Triglochin maritima)*	Nevada bulrush - (seaside arrow-grass)	S2S3	Herbaceous

PARKLAND NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000093	*Spartina gracilis - (Pascopyrum smithii)*	alkali cord grass - (western wheat grass)	S2S3	Sparsely Vegetated
CEAB000089	*Stipa curtiseta - S. viridula - Carex sp.*	western porcupine grass - green needle grass - sedges	S2S3	Herbaceous
CEAB000094	*Triglochin maritima*	seaside arrow-grass	S2?	Sparsely Vegetated

GRASSLAND NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000095	*Acer negundo / Prunus virginiana*	Manitoba maple / choke cherry	S1S2	Forest/ Woodland
CEAB000156	*Artemisia cana - Atriplex nuttallii*	silver sagebrush -Nuttail's atriplex	S2S3	Shrub Herbaceous
CEAB000155	*Artemisia cana - Sarcobatus vermiculatus / Stipa comata*	silver sagebrush - greasewood / needle-and-thread	S1S2	Shrub Herbaceous
CEAB000154	*Artemisia cana / Festuca campestris - Stipa curtiseta*	silver sagebrush / mountain rough fescue - western porcupine grass	S1?	Shrub Herbaceous
CEAB000153	*Artemisia cana / Festuca idahoensis*	silver sagebrush / Idaho fescue	SP	Shrub Herbaceous
CEAB000096	*Artemisia cana / Stipa comata*	silver sagebrush / needle-and-thread	S2S3	Shrub Herbaceous
CEAB000151	*Artemisia cana / Stipa comata – Calamovilfa longifolia*	silver sagebrush / needle-and-thread - sand grass	S2S3	Shrub Herbaceous
CEAB000152	*Artemisia cana / Stipa curtiseta – Carex spp.*	silver sagebrush / western porcupine grass - sedge spp.	S1S2	Shrub Herbaceous
CEAB000157	*Artemisia cana / Stipa viridula – Pascopyrum smithii*	silver sagebrush / green needle grass - western wheat grass	S2S3	Shrubland
CEAB000097	*Artemisia longifolia - Chrysothamnus nauseosus*	long-leaved sagewort - rabbitbrush	S1	Sparsely Vegetated
CEAB000169	*Betula occidentalis*	water birch	SU	Shrubland
CEAB000098	*Calamovilfa longifolia - Stipa comata*	sand grass - needle-and-thread	S3	Herbaceous
CEAB000099	*Carex nebrascensis*	Nebraska sedge	S2	Herbaceous
CEAB000132	*Carex stenophylla - Pascopyrum smithii*	low sedge - western wheat grass	S1	Herbaceous
CEAB000058	*Crataegus rotundifolia / Heracleum lanatum - Urtica dioica - Viola canadensis*	round-leaved hawthorn / cow parsnip - common nettle - western Canada violet	S1S2	Shrubland
CEAB000100	*Danthonia californica – Carex brevior*	California oat grass - slender-beaked sedge	S2	Herbaceous
CEAB000101	*Danthonia unispicata – Elymus lanceolatus – Pascopyrum smithii*	one-spike oat grass - northern wheat grass - western wheat grass	S2	Herbaceous
CEAB000133	*Distichlis stricta - Pascopyrum smithii*	salt grass - western wheat grass	S2	Herbaceous
CEAB000102	*Elaeagnus commutata / Pascopyrum smithii*	silverberry / western wheat grass	S3	Shrubland
CEAB000145	*Elymus lanceolatus - Muhlenbergia cuspidata*	northern wheat grass - plains muhly	SP	Herbaceous
CEAB000146	*Elymus lanceolatus - Pascopyrum smithii*	northern wheat grass - western wheat grass	S2?	Herbaceous
CEAB000147	*Elymus lanceolatus - Stipa comata*	northern wheat grass - needle-and-thread	S1S2	Herbaceous
CEAB000103	*Erigeron radicatus - Phlox hoodii - Eriogonum flavum*	dwarf fleabane - moss phlox - yellow umbrella-plant	S1	Sparsely Vegetated

GRASSLAND NATURAL REGION				
CODE	SCIENTIFIC NAME	COMMON NAME	RANK	GROUP
CEAB000104	*Festuca hallii*	plain's rough fescue	S2	Herbaceous
CEAB000033	*Festuca hallii - Calamovilfa longifolia*	plain's rough fescue - sand grass	S1	Herbaceous
CEAB000034	*Festuca hallii - Carex spp. / Arctostaphylos uva-ursi*	plain's rough fescue - sedges / common bearberry	S1	Herbaceous
CEAB000035	*Festuca hallii - Koeleria macrantha / Juniperus horizontalis / forbs*	plain's rough fescue - June grass / creeping juniper / forbs	S1	Herbaceous
CEAB000030	*Festuca hallii - Stipa curtiseta*	plain's rough fescue - western porcupine grass	S2	Herbaceous
CEAB000032	*Festuca hallii - Stipa viridula*	plain's rough fescue - green needle grass / forbs	S1	Herbaceous
CEAB000129	*Festuca idahoensis - Elymus lanceolatus (Agropyron dasystachyum) - Stipa comata*	Idaho fescue - northern wheat grass - needle-and-thread	S3	Herbaceous
CEAB000105	*Glyceria striata*	fowl manna grass	SU	Herbaceous
CEAB000106	*Hippuris vulgaris - Ranunculus circinatus - Callitriche sp.*	common mare's-tail - white water crowfoot - water-starwort	SU	Aquatic
CEAB000007	*Juniperus horizontalis / Koeleria macrantha - Eriogonum flavum*	creeping juniper - June grass - yellow umbrella-plant	S1S2	Sparsely Vegetated
CEAB000158	*Muhlenbergia asperifolia - Scirpus nevadensis - Distichlis stricta*	scratch grass - Nevada bulrush - salt grass	S1S2	Herbaceous
CEAB000107	*Oryzopsis hymenoides - Leymus canadensis*	Indian rice grass - hairy wild rye	S2?	Sparsely Vegetated
CEAB000135	*Pascopyrum smithii - Artemisia ludoviciana*	western wheat grass - prairie sagewort	S1S2	Herbaceous
CEAB000137	*Pascopyrum smithii - Atriplex nuttallii*	western wheat grass - atriplex	S1	Herbaceous
CEAB000138	*Pascopyrum smithii - Bouteloua gracilis*	western wheat grass - blue grama	S1	Herbaceous
CEAB000141	*Pascopyrum smithii - Stipa comata - Bouteloua gracilis*	western wheat grass - needle-and-thread - blue grama	S2S3	Herbaceous
CEGL002664	*Populus angustifolia / Cornus stolonifera*	narrow-leaf cottonwood / red-osier dogwood	S2S3 G4	Forest/ Woodland
CEAB000166	*Populus angustifolia* / recent alluvial	narrow-leaf cottonwood / recent alluvial	S2S3	Forest/ Woodland
CEGL000657	*Populus deltoides / Cornus stolonifera*	plains cottonwood / red-osier dogwood	S2S3 G2G3	Forest/ Woodland
CEAB000163	*Populus deltoides / Glycyrrhiza lepidota - Juncus balticus*	plains cottonwood / wild liquorice - wire rush	S2S3	Forest/ Woodland
CEAB000164	*Populus deltoides / recent alluvial*	plains cottonwood / recent alluvial	S1S3	Forest/ Woodland
CEGL000660	*Populus deltoides / Symphoricarpos occidentalis*	plains cottonwood / buckbrush	S2S3 G2G3	Forest/ Woodland
CEAB000108	*Populus X jackii – Betula occidentalis / Salix lutea / Stipa comata*	cottonwood - water birch / yellow willow / needle-and-thread	S1	Forest/ Woodland
CEGL001799	*Puccinellia nuttalliana*	Nuttall's salt-meadow grass	S3? G3?	Herbaceous
CEAB000165	*Rumex venosus*	wild begonia	S2S3	Herbaceous
CEAB000091	*Ruppia cirrhosa*	widgeon-grass	S2	Aquatic
CEAB000047	*Salicornia europaea*	samphire	S2	Sparsely Vegetated
CEGL000947	*Salix amygdaloides*	peach-leaved Willow	S1S2 G3	Herbaceous
CEAB000167	*Salix bebbiana / Cornus stolonifera*	beaked willow / red-osier dogwood	S3?	Shrubland

GRASSLAND NATURAL REGION				
CODE	**SCIENTIFIC NAME**	**COMMON NAME**	**RANK**	**GROUP**
CEAB000168	*Salix lutea / Cornus stolonifera*	yellow willow / red-osier dogwood	S3?	Shrubland
CEAB000013	*Sarcobatus vermiculatus / Pascopyrum smithii*	greasewood / western wheat grass	S2S3	Shrubland
CEAB000015	*Sarcobatus vermiculatus silt dune community*	greasewood silt dune community	S1	Shrubland
CEAB000109	*Schizachyrium scoparium – Calamovilfa longifolia*	little bluestem - sand grass	S2	Herbaceous
CEAB000002	*Schizachyrium scoparium – Festuca campestris*	little bluestem - mountain rough fescue	S1?	Herbaceous
CEAB000092	*Scirpus nevadensis - (Triglochin maritima)*	Nevada bulrush - (seaside arrow-grass)	S2S3	Herbaceous
CEAB000093	*Spartina gracilis - (Pascopyrum smithii)*	alkali cord grass - (western wheat grass)	S2S3	Herbaceous
CEAB000110	*Sporobolus cryptandrus* semi-*active dune*	sand dropseed semi-active dune	S2	Sparsely Vegetated
CEAB000111	*Stipa comata - Festuca spp.*	needle-and-thread – fescue	S1	Herbaceous
CEAB000112	*Suaeda moquinii – Atriplex suckleyi sparsely vegetated badland slopes*	Moquin's sea-blite - endolepis sparsely vegetated badland slopes	S2?	Sparsely Vegetated
CEAB000094	*Triglochin maritima*	seaside arrow-grass	S2?	Sparsely Vegetated